COMPUTERWORLD

THE NEWSWEEKLY FOR THE COMPUTER COMMUNITY

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Fifty-four exhibitors were at the DPMA convention. (CW Photo by T.J. Morton)

DPMA Attendance Tops 1,900

Administration Problems Bared

By E. Drake Lundell Jr.
and Thomas J. Morton
Of the CW Staff

HOUSTON – In the face of a drooping economy, the Data Processing Management Association's 20th international data processing conference and business exposition last week showed about the same attendance as last year, even though the number of exhibitors declined.

But pent-up frustration and disenchantment with the administrative staff of DPMA surfaced at the international board of directors' meeting just before the official opening.

Although some of the disenchantment remained, many of the international directors indicated that steps taken at the meeting would significantly alleviate the grievances if they are carried out successfully.

According to reports from the meeting, international directors of the organization showed particular concern with problems of the international area, member relations, and the overall efficiency and effectiveness of the administrative staff.

A reported attempt from the floor to call for the resignation of Executive Director R. Calvin Elliott was headed off when outgoing President James D. Parker Jr. agreed to have read to the international directors a previously unavailable analysis of the administrative operation and organization of the association.

The study was commissioned last year and performed by Touche, Ross and Co. The report, according to an attendee at the meeting, revealed that operations at the headquarters, while businesslike, were getting more and more out of control, because no decisions had ever been made on what the functions of headquarters were. This was believed to be degrading relationships between members and headquarters.

President Parker was asked to establish a committee to implement the study which called, in part, for more decision-making power for the executive director in day-to-day operations.

Member Relations

In the area of member relations, the meeting of the interna-

(Continued on Page 3)

IBM Reconfigures Maintenance Rates

By Michael Merritt
CW Staff Writer

WHITE PLAINS, N.Y. – IBM has rearranged some of its maintenance prices and services, and, for the most part, increased prices at its Datacenters.

The extra-hours maintenance premium has drifted down, per-call hourly maintenance rates have floated up, and a new service is being given teleprocessing users at no extra charge.

Minimum monthly maintenance rates were left unchanged by the latest announcement.

IBM recently reduced maintenance rates on 2305s, 3211s, 3330s, and 3420s and their controllers. Shift differentials were eliminated for equipment on fixed term leases.

The per-call increases raised hourly rates on key-entry and terminal equipment from $22 to $24; on System/3 and 7, 360/20, 1130, 1800, unit record and EAM equipment from $22 to $28; and on the rest of 360, 370, 1400, and 7000 series equipment from $26 to $32.

On purchased equipment, the minimum monthly maintenance charge gives users nine hours a day, five days a week, of maintenance availability.

Users who consistently run more than nine hours a day, though, may want to increase their coverage. The extra cost for this is figured as a percentage of the minimum charge.

For example, 24 hour service on electronic equipment – 360 CPUs, displays, and so on, used to cost 30% more than the standard nine hours.

At the new rates it costs only 26% more.

For 12 hours of coverage, the premium has declined from 15% to 14%.

On electro-mechanical equipment – printers, disks, and the like, the 24-hour premium has fallen from 45% to 34%, and the 12-hour rate from 18% to 16%.

The 24-hour rate on strictly mechanical equipment has been lowered from 60% to 46%, and the 12-hour rate from 20% to 19%.

(Continued on Page 22)

Nader Asks Community to Help Consumers

By Alan Drattell
CW Washington Bureau

WASHINGTON, D.C. – Ralph Nader called on the computer community last week to use its technology to help the consumer movement.

"Computerized systems can help redress the imbalance which keeps growing between seller and buyer," he said, adding that the computer community can do a number of things "to further the objectives of servicing the consumer."

The remarks occurred at a discussion of a proposed consumer information system, now being worked on voluntarily by a number of computer professionals under the aegis of Nader's public interest research group.

"The quest [for such a system] will test the professional commitment of those in the computer community to develop more balanced uses of computers for returning power to the consumer," Nader said.

There are four steps the computer community can take to reach and help the consumer, Nader said.

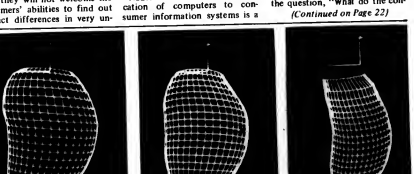
- Develop a technical universe that would include anticipating the bugs "which will inevitably arise in the first stages" of a consumer system based on EDP technology.
- Inform the consumer as to what a computer-based system can do for him.
- Acknowledge that "vested interests" will oppose the application of computerized systems, since they will not welcome the consumers' abilities to find out product differences in very understandable terms.
- The computer community must indulge in "a little old-fashioned lobbying for the public interest." Nader asked why the computer community shouldn't, for example, begin interesting Congress in holding hearings.

Nader admitted that the application of computers to consumer information systems is a relatively unexplored field.

T.D.C. Kuch, a senior systems analyst at the National Institutes of Health and one of the computer professional volunteers involved in the development of a consumer information system outlined some concepts of such a system.

In the final analysis, he said, the question, "What do the con-

(Continued on Page 22)



Heart Throbs

MOUNTAIN VIEW, Calif. – Doctors can watch an animated computer display of a patient's diseased heart as it beats, using a system devised by a Nass-Stanford University medical team. Shown here as a left ventricle in three stages of contraction, the images permit the doctors to figuratively "walk around" the isolated beating heart to determine the need for surgery. The images may also be stopped at any point of expansion or contraction and played back. Using an IBM 1800, a three-dimensional image of any desired heart chamber may be projected on a 2250 screen. The system's animated display is exact enough to show a dead section of the heart wall about the size of a nickel, details of large malfunctions and holes between heart chambers.

On the Inside

New Zealand DP Has Personnel Shortage – Page 7

Rochester Seeks Rates 300% More Than Bell's – Page 10

Communications 10
Computer Industry 17
Editorial 4
Financial 20
Software/Services 9
Systems/Peripherals ...11

★ 1971 ★
'More' Supplement
Follows Page 8

'Diagnostic DP Impractical'

M.D. Hits Privacy Safeguards

By Joseph Hanlon
CW Staff Writer

BOSTON – Privacy safeguards on medical records are inadequate, and computerization will make the problem worse, according to Dr. Leonard Cronkhite, General Director of Children's Hospital Medical Center.

Children's has pioneered the use of computers for such applications as bed utilization and outpatient booking.

In a wide-ranging interview on computers in health care, Cronkhite predicted that the government will force the different computer companies to make medical systems more compatible. He also said that despite continuing research, computerized diagnostic systems will remain impractical.

On privacy, Cronkhite noted that "society tends to be punitive to sick people." Past diseases often make it impossible to get a job or insurance.

"A diagnosis of 'hysteria' could keep someone from ever getting a job," he said, even though the diagnosis may not be accurate, and in any case means different things to different doctors. Thus medical records must be kept confidential.

Cronkhite is also affiliated with Health Inc., a community medical program. He is surprisingly candid about data security in both places.

At Children's, where medical records are on paper: "Newspaper reporters have plants in my hospital. A $20 bill will buy anything."

And at Health, where a limited amount of medical data on 300,000 people will eventually be put on computer, Cronkhite admits that there are no safeguards at all. But he claims that proper safeguards are not available from the manufacturers.

Compatibility Pressure

Incompatibility of computer systems hurts hospitals in two ways, according to Cronkhite. First, data must be formatted differently for computers of different payors, such as Medicaid and insurance companies.

Second, as other industries have found, programs cannot be transferred from one computer to another.

Cronkhite expects the Secretary of Health, Education, and Welfare to force manufacturers to make their medical systems more compatible, particularly in format as the government pays increasing amounts for health care.

Work continues in several places to develop computerized diagnostic systems, where the doctor sets his aide input information about the patient, and the computer prints out a list of possible illnesses. But Cronkhite sees little use for such systems in the near future.

They are just too expensive and he believes diagnostic systems depersonalize medical care to a degree that patients will not accept.

Patients want to spend more time with the doctor, and they want to see him first. Only after they see him, are they willing to accept his assistants, according to Cronkhite. Yet the diagnostic systems work just the opposite way. The patient sees the assistant first, who takes down much of the data to be input to the computer.

Finally, diagnostic systems cannot take into account non-verbal communication, Cronkhite declared. For example, the patient will use the same words to describe an ulcer and a nervous stomach, yet the doctor can often distinguish the two by the tone of voice used by the patient.

Other kinds of non-verbal communication, such as the way a patient sits in a chair, are often important, he continued.

Restrict Computer Power

On another subject, Cronkhite warned that computer people in hospitals often have too much management power. "They tend to gain their power inadvertently because they are the only ones with hard data."

But the manager must balance the hard data against professional opinions that can't be backed up with data.

"Many managers have forgotten their other traditional sources of information."

As an example, Cronkhite noted: "My financial people will give me projections that look perfect. But I have to ask what basic hypotheses they made about the outside world.

"I challenge their assumptions, and put in some social and economic input that they may not know."

"But a hell of a lot of hospital managers don't do that," he continued, and just accept the first report.

Computer Betting Starts, Ticketron Enters Race

NEW YORK – Off track betting is finally being computerized – seven months late and two months after betting began with a complex manual system.

Meanwhile, New York City's Off Track Betting Corp. (OTB) is testing a Ticketron betting system for use in case the present system does not work.

Computer Sciences Corp. (CSC) now has three betting shops on line, while nine shops and the telephone room operate manually. If the system continues to operate properly, new computerized shops will open at the rate of one a week, and computer terminals will be installed where the manual system is now in use.

Complete computerization is promised by Fall.

Both systems are modifications of ticket reservation systems, with CSC basing its system on its unsuccessful Computicket. An OTB spokesman called Ticketron's system "an order of magnitude less sophisticated" than Ticketron.

He cited several problems: Ticketron is slower, terminals are on-line rather than buffered which means the user must wait, CSC can handle more terminals, and Ticketron terminals do not have CRTs.

Nevertheless, the source noted that Ticketron would be better than a manual system if CSC does not get its system working, or if CSC cannot expand fast enough.

Ticketron is expanding into other forms of gambling as well. It is installing terminals to sell New Jersey lottery tickets. Each terminal is connected to a CDC 1700, which keeps a record of the ticket numbers so they can be included in the drawing.

Cannes Festival to Use DP

CW European Bureau

CANNES – The scheduling by category of 12,000 attendees and 5,000 officials into seats for 62 different performances of 30 international films at the Cannes Film Festival, will be done by a Honeywell Series 50 computer system.

The computer has been installed at the Festival Palais and will also select the 6,000 members of the audience for the four daily viewings, print invitations with the corresponding seat numbers and issue the invitations on the basis of the visitor's status, length of stay and professional category.

News Wrapup

IBM to Deliver 370/145 in July

ENDICOTT, N.Y. – IBM plans to ship its all-monolithic 370/145, being built here, to the first customer in early July, more than a month earlier than indicated when the unit was announced.

IBM said it has thirty-six 145s at various IBM installations around the country; some of them are available for customers to try out. Deliveries of 360/22s began this month, IBM said.

Adapso Drops Bank DP Services Suit

WASHINGTON, D.C. – The Association of Data Processing Service Organizations (Adapso) announced it is dropping its suit against the U.S. Comptroller of the Currency and the American National Bank and Trust Co., St. Paul, Minn. The suit challenged the bank's practice of providing DP services.

Comptroller William B. Camp said it has been a consistent judgment of his office that the furnishing of DP services by banks is a fundamental and proper part of their business and that dismissal of the lawsuit confirms this judgment.

IRS Forming New Taxpayer Service Unit

WASHINGTON, D.C. – Citing recognition of the increased capabilities of its computer systems, and the importance of effective service to taxpayers, the IRS is creating an accounts, collection and taxpayer service organization (Acts). The realignment will put the data processing and collection divisions, and a new taxpayer service unit under the supervision of Acts.

Report Suggests Power Shut Off

NEW YORK – Computer user or not, the local businessman finds little cheer in a recent state report on the summer's power crises.

One of the proposals in the document was to cut off electricity to entire buildings for days at a time.

Milton Musicus, chairman of the mayor's Interdepartmental Committee on Public Utilities, criticized the shutdown proposal as a "regressive approach" to solving growth needs. He also claimed 3% and 5% voltage reductions, or "brownouts," would be a "regular matter of business" here this summer.

Alaska Scores Prompt NCIC 'Hit'

WASHINGTON, D.C. – It didn't take long for Alaska to record its first "hit" on the FBI's computerized wanted persons file (NCIC). Within two hours after state police had gone on-line with the FBI, a state trooper stopped a car for speeding. NCIC checks on the car and driver resulted in negative responses, the FBI reported.

But an inquiry on a passenger revealed a two-year-old warrant in Portland, Ore. The FBI reported arrangements for extradition, and Alaska came of computer age.

'Make People Honest' System's Goal

HONOLULU – The State Employment Agency is installing a computer job matching system whose sole "intent is to make everybody honest."

The first phase of the system involves preparation of computer data on all employers' job orders. The job bank proposal is to insure that by use of computers available jobs really are jobs, said State Labor Director Robert Hasegawa.

But Are All Computers 'Clean'?

BOULDER, Colo. – The computer was "apparently deemed not to be dirty," so it was not cleaned and inspected before being shipped home from Vietnam.

That's how a Pentagon official explained the discovery of a mysterious package, originally thought to be an explosive device, inside the mainframe of a computer.

The machine was being returned from duty, and did not undergo the "strict inspection and cleaning procedure which most military equipment does, prior to shipment approval by Customs and Department of Agriculture officials, the Pentagon spokesman stated.

The "explosive device" turned out to be rat poison, he said.

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Univac presents a history of data processing.

Seminars Present Varied Topics, Interest High

HOUSTON – A new format, a stress on management techniques, and a complete departure from the norm was the 1971 version of the seminar program of the DPMA conference.

Most crowded of all the seminars was Cmdr. Grace Hopper's "Managing the Computer."

She told her audience she is appalled to enter centers now and see up to 30% of the CPU's capacity being devoted to the operating system. "What a waste," she said. "I dread the day when I will go into a center and find the processor doing 100% on operating."

She said she couldn't understand how companies that delegate authority to distinct functions within the corporate structures make themselves subservient to one DP operation.

"Within five to 10 years," she said, "we'll have the equipment we need to make MIS on-line in minis with a mini data base. Minis talking to minis and giving people just the information they want.

"When a sales manager wants the reports on his salesmen, he doesn't want their social security numbers and health records too. Mini data bases and minicomputers can make data processing really work."

In an open seminar on information storage and retrieval, Norbert E. Andres of Advanced Digital Systems Inc. urged his audience to "save your tapes, they can go on-line now."

Saying that tape was the slowest of all on-line information systems, Andres said "the library rickshaw, the biggest bottleneck in the computer room, the most archaic operation in DP centers" was on its way out of existence with the approach of automatic tape retrieval.

The increase of density to 20,000 bit/in, the newer drives that accommodate the higher data rates, the application of video data at ultra high densities, and the reduction of human labor in both the recording and handling of tapes are all making tape on-line and are guaranteeing its survival for "a few more years," he said.

In still another seminar, Reid Henderson, president of Compudemics, Inc., and a CDP, told his listeners management's criticism that DP didn't contribute to corporate effectiveness was not only factual but was the result of insufficient planning at the DP level.

He cited examples of planning which included and encouraged the participation of user executives or personnel in the development of systems usage.

DPMAers, hurried a little by the shorter scheduling, gave the impression that the new format was appreciated.

"I liked it," said a DPMA member from Akron, Ohio. "The shorter time they gave the speakers seemed to make them work harder, made them take a lot of the irrelevance out.

"But then," he added, "there wasn't much time for questions, especially if you had another session to get to."

Computer No Savior, Should Be Treated as Team Member: Jones

By Thomas J. Morton
CW Staff Writer

HOUSTON – The computer should not be regarded as the savior of American corporate existence, but rather a mere member of the team in the corporate operation, said the keynote speaker at the 20th DPMA conference.

John L. Jones, vice-president of Management Information Services for Southern Railway Systems, believes "the computer should make money for the corporation, not just save it."

Jones, a holder of a master's degree in electrical engineering and mathematics from MIT, defined the major problem facing DP as a serious communications gap between the computer operations staff of a corporation and management.

The gap has to be bridged, he said, for the benefit of American business and for the sake of this industry.

Jones, vice-president in charge of Management Systems and Sciences Division of the American Management Association, said top management may say it is vitally interested in bridging the existing communications gap but not mean it because it is not sure the gap exists or that it should communicate with DP at all.

The wall between the two factions, he said, is not built entirely by management. "DP people have a way," he said, "of turning people off. They seem to be more interested in doing their own work at odd hours and talking their own language among themselves than in really becoming members of the total corporation."

Management is becoming increasingly aware of the value of the computer, Jones noted. "It is almost inconceivable," he continued, "that in modern business, top management will allow a goodly percentage of its corporate resources – up to and including millions of dollars – to be spent without having the slightest idea why it is being spent. That era is, fortunately, behind us."

"DP," he said, "must take the initiative to become part of the management resource team, to make sure that management becomes involved in the DP operation.

"And then the DP people must be able to communicate in straightforward, basic language, and be sure that management does understand, and not be satisfied with a verbal nod."

It is the responsibility of top management, Jones explained, to determine what is to be accomplished by systems. It is the responsibility of DP to determine how the what is to be accomplished. Both have the responsibility of being sure that the other understands completely.

This, he said, can be accomplished by a "committee" approach to corporate DP; a committee comprised of both top management and DP management whose function it is to develop applications in computer usage.

Directors' Meeting Reveals Administrative Problems

(Continued from Page 1)

tional directors voted to establish a special office to deal with complaints of members and to outline more clearly the services available to the chapters and individual members.

The new directorate will be staffed full-time, reports from the meeting indicate, and will work through the local chapters and in some cases directly with the membership.

"This move should go a long way to solving some of the communications problems that presently exist between the international headquarters and the individual member," according to one international director.

"There have been a lot of problems in this area that deserve criticism," he said, "and this is the first time that the administrative staff has reacted positively on the issue.

"While many of the problems still remain," he concluded, "I think that the staff should be given a year to show that they can improve relations with members through the new setup. If things aren't better next year, then we should take more drastic action."

International Scene

The problems in the international area still remain after the meeting here, however, and are more serious to an organization that wants an international scope and mandate, according to some association sources.

Reports circulating at the meeting concerned the possible pullout of the Japanese DPMA groups from the international organization.

The Japanese cited the inability to get the Certificate in Data Processing exam printed in Japanese. The national DPMA in Japan numbers more than 2,000 domestic members but only 40 members of the international DPMA. To date, there are no Japanese CDPs.

The international organization reportedly promised to get exams in Japanese out by March, but still has not set a new printing date.

Moves were also under way in the Canadian delegation to set up the Canadian chapter as a separate division instead of being part of divisions that also include U.S. chapters.

The move was seen as part of growing economic nationalism among some elements of the Canadian computer community and the fear of domination by the U.S. chapters.

Budget Fight

The international directors' meeting also was the scene of a fight over the association's projected budget for the coming year; a fight that was resolved "with the introduction of a more realistic spending plan," according to one of the attendees.

Originally, the organization had submitted a budget based on revenues from the dues of 29,000 members, but cuts were made on the floor that took the budget down to the level that could be supported by dues from 28,000 members.

However, it was also revealed at the meeting that the association presently has only 26,514 members and some sources among the international directorate stated that even the trimmed budget was unrealistic in the face of present projected membership.

Elliott Remarks

Elliott, the embattled executive director, said later that it is the nature of any association to react to crises instead of being able to plan in advance for any contingencies.

The organization is now reacting to past problems and actions taken at the meeting should serve to clear up areas where there is a lack of communication or misunderstanding of the association's goal, Elliott said.

Many of the international directors contacted here agreed with his assessment and several said it was one of the most productive sessions in the organization's 20-year history – a landmark session in terms of "putting DPMA on the right course," according to one.

However, there are still some disenchanted directors and many who say if there are not positive results within the next year then more action will have to be taken.

"DPMA has shown by this meeting that it can move positively to meet legitimate grievances," one said. "I still think that there is time to save the organization and make it stronger than before."

Sanders System Highlight Of Products Announced

HOUSTON – There were few major product announcements at the DPMA show here last week. Most of the exhibits displayed equipment already accepted and in use in the field.

The DPMA exhibit hall attracted several exhibitors who have defected from other industry shows including IBM and Univac, who dominated the floor as the only mainframe makers in attendance.

Most notable product announcement was the Sanders' 804 terminal system (see page 11). Computer-Link Corp. unveiled three new products, a disk pack inspector, cassette cleaner/rewinder and a tape evaluator/cleaner.

The Model 650 disk pack inspector checks IBM's 1316 or 2316 packs for critical tolerances.

The unit can be used for inspection of both 6-high and 11-high disk packs. The new 1,000 magnetic tape evaluator/cleaner may be used as a two-path tape cleaner with the file protect feature. The unit is available with 7- or 9-track, full surface, or full width test format at 556, 800 or 1,600 bit/in.

The Transcom Division of Hi-G expanded its CT 200 series of cassette tape terminals with the introduction of the CT 300 line, consisting of four standard models which feature hard copy strip printer, numeric or alphanumeric keyboard and magnetic tape cassette storage unit.

Optional features available will include automatic answering (polling), originate answer, device controls, and acoustic coupling. Prices will range from $1,825 to $2,665, depending on model and features.

New DPMA Officers

Newly elected DPMA officers are: Edward O. Lineback, president; Herbert B. Safford of General Telephone, Santa Monica, Calif., executive vice-president; Eric Ustad of P.S. Ross and Partners, Montreal, vice-president, David B. Johnston of Western Electric, Indianpolis, vice-president; Anthony J. Long of World Publishing Co., Cleveland, vice-president; Kenneth Sledd of Virginia Commonwealth Services, Richmond, vice-president; James B. Sutton of Birmingham Trust National Bank, Birmingham, Ala., vice-president; J. Edward Palmer of RCA, Burlington, Mass., vice president; and Stephen DiStefano of Computer Sciences Corp., Silver Spring, Md., secretary-treasurer.

Editorial

Be Selfish - and Help

No one knows how many experienced DP people are currently unemployed and having trouble finding new positions.

A reader, who has unsuccessfully applied to 275 companies since January, sent us information last week that indicates the jobless may number thousands.

When the recession ends, we are going to be back to the days when firms were pirating people from each other at inflated salaries because there weren't enough experienced people. And the more of these people who are driven into other fields to find employment now, the worse the shortage will be later.

So if you know you're going to need to hire some experienced personnel next year, you would be better off hiring them now, while good people are available at reasonable salaries. Prying the extra money loose from management won't be as difficult as you might think – as long as you make it clear you are taking advantage of the situation to find a person who *exactly* meets your needs.

But be prepared to review a lot of resumes. Advertising for experienced people has brought as many as 1,100 applicants for one job.

'Er - Maybe Things Will Clear Up in a Year or So ...'

DC Data-Line
By Alan Drattell
Is on Page 6

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Letters to the Editor

Many Users Anxious To Sort Out Sorts

I have read with great interest the Taylor Report (CW, June 16).

We are involved in re-evaluating our Sort software and would be interested in Sort 450 which attracts us not only because of the price, i.e., it is free, but also because of its high performance in a small core environment.

There are two points which make Sort 450 prohibitive at this juncture: the lack of support, and the fact that it does not operate on the 2314 which I find difficult to understand, but that is what the IBM rep informs me.

Taylor called for a show of hands on the Sort 450. We hereby raise our hands (in supplication!).

Norman Shatkin
Manager, Software Development
Mnemotech Computer Systems
New York, N.Y.

Modifications Wanted

Our company would most definitely be interested in a supported version of the 450 disk sort program.

We would also like to have this version modified so that it: offers the capability of being called by a problem program; uses 2314 disk device for input, output and work area; and has the same JCL and file name conventions as 483 sort.

We have just concluded an evaluation of SM-1 and PI Sort II. The tests were run in a 32K partition using a random file. PI Sort II was 5% faster than 483 while SM-1 was 4% faster.

Using actual production runs PI Sort II varied from 18% faster to 3% to 15% slower than 483. We have therefore concluded that the new sorts are not written with an execution partition of even 32K in mind. (PI Sort II minimum partition size is 30K).

Spyridon Aspiotis, CDP
Hughes Computer Systems, Inc.
Bethesda, Md.

Taylor replies: Yes – 32K partitions are not good for PI performance. I don't know where the breakeven point is, but probably around 40K to 45K. Interesting to notice the difference between random and real data.

483 Record Size Limited

We are very interested in keeping IBM Sort 450 'alive and well." Please put us on record as supporting Taylor's proposal of independent software support for 450.

We have a 1615 360/25 disk system and this is all we can use for sorting because Sort 483 has a maximum record size in 16K of 600 byte.

Bill Wood
DP Manager
Kling Co., Inc.
Louisville, Ky.

Future Compatibility?

We presently use SM-450 under DOS on an 360/25 with 32K memory and are on Release 21, having both the 7K and a 10K supervisor; multiprogramming is not used. The sort program has seemed adequate for the most part, though obviously an own-code exit to perform the read function would be handy.

As others, though, we're concerned with the possibility that, in the near future, SM-450 will not be compatible with future releases of DOS (or whatever other operating system may take its place.)

In this case, we would most certainly be interested in independent maintenance, since regardless of our in-house capabilities the cost of digging into such a program would be prohibitive as opposed to buying "a small part of the effort."

Another out for us, seriously under consideration, is to leave the fold; go to another computer company more sensitive to our individual needs. But for the moment, we're interested!

Stephen B. Horton
Assistant Vice-President, DP
Ames Department Stores, Inc.
Hartford, Conn.

2314 a Bottleneck

We are using IBM Sort 483, since we are using exclusively the 2314 equivalent drives, and not able to use Sort 450.

There is apparently no alternative but to continue to use Sort 485 or to rent SM-1 or PI Sort II.

If we have missed some feature of the Sort 450 that makes its use possible on the 2314 or equivalent drive, we would certainly have an interest in Taylor's offer of support. Taylor has made no mention of the type of disk drive used in these various sorts programs. We would appreciate clarification on this matter.

Haydn Lewis
Assistant Treasurer
Revere Copper and Brass, Inc.
Rome, N.Y.

Aware of Inefficiencies

We are painfully aware of inefficiencies involved with Sort 483 since we presently rent computer time locally. However, we anticipate the arrival of a 360/22 within the next 18-24 months. At that time (and perhaps even sooner) we would be more than willing to spend $125 per year on a more efficient sort.

Richard W. Herzfeld
President
Computerized Name and Label Services, Inc.
Wauwatosa, Wis.

Please Add Us to List

Please add us to the list of those "interested in having the fastest IBM free disk sort (Sort 450 supported independently).

Faster disk sorts are of great interest to us because of the nature of our business and volumes of files requiring sorting.

Richard Fogo
Manager/EDP Systems
Comp-U-Check, Inc.
Detroit, Mich.

Where Is DYL-250?

Re your article in June 9 issue concerning $1/Day Package of Computer Programs: The DYL-250 "data base management system" and other Dylakor products sound very interesting. How can I get more information on this subject?

George J. Osipov
Director Information Services
Morgan Construction Co.
Worcester, Mass.

Dylakor's address is 16225 Saticoy St., Van Nuys, Calif., 91406. Ed.

KU Developed Software

With respect to the June 9 article entitled "KU Accepts GE/600 Users' Software," there are several errors. The software we are using, called Integrated Data Store (IDS) is completely provided and supported by HIS, the hardware vendor. The design concepts for our MIS are entirely our own, and we presented a progress report on the development of our MIS to the GE/600 user's group, not they to us.

With these exceptions the event is accurately reported, and we are pleased that you chose to share what we're doing with the public.

Roger N. Gaunt
Assistant DP Director
University of Kansas
Laurence, Kan.

We're Down the Street

We at Pansophic would like to express our appreciation for the mention you gave us in the May 19 issue. We would however, like to point out that our address is 1211 West 22nd St.

Edward F. Loritz
Vice-President
Pansophic Systems Inc.
Oak Brook, Ill.

Computerworld welcomes comments from its readers. Letters should be addressed to: Editor, Computerworld, 797 Washington St., Newton, Mass. 02160.

Should Billing Dates Have Their Own Standards?

In a delightful letter J.T. Chamberlain, a New York informations systems designer, proposes the addition of a 9th standard to the list appearing in the June 2 issue of *Computerworld*.

His standard is "Billing due dates should be reasonable with respect to the customer's individual requirements, not as a result of a programmer's desire to level out computer work loads."

I think you will best get the flavor of his request by the following extract from his letter.

"To substantiate – I am paid on the last day of each month and have most of my bills by the fifth when I divide it up among all my deserving creditors. However, the telephone bill, dated the first, always arrives on the 10th and has to wait until the following month. They are nice. They don't say anything.

"The Con Edison bill fell in this category but was on a two-month cycle and when it was changed to a one-month cycle, I began getting computer messages that accused me of being late when in reality the Ed couldn't get the bill out on time.

"But the worst is R.H. Macy's which puts a due date of the 28th of the month (when I'm really broke) after which it charges a high interest. Macy's probably loses several hundred dollars of sales a year because I go across the street."

There seem to be two points here – one, the timing of the billing dates; and two, the most desirable timing of billing. Chamberlain tells me he has done a small private survey as to the way people hold back payments until such time as they are themselves paid. He reckons it is adding millions to firms' accounts receivable – he may be right.

But this does not make it a standard as I see it. A standard is something which should be obeyed. If Macy's does not want to get its bills paid on time – perhaps so as to receive that high interest charge – then that is up to Macy's, as long as Macy's allows a reasonable period for payment.

Approved Practices Possible

But this is not to say we should ignore this situation. It is a valuable and useful one. What we can do is take the Sanford rule: "A bill should be payable," and put underneath it an "Approved Practice" – "Synchronizing billing dates with customer pay periods is an acceptable technique to reduce accounts receivable, and to avoid customer boycotts." This can then be called the Chamberlain Practice and take its place in our book.

The second point he brings out, the Macy's case, may verge on another issue. His letter tells us he has been receiving Macy's bill less than 23 days before the payment is due. How much less we do not know.

But another reader, Stephen Metelits does know. His bill does not come from Macy's but from some Chicago-based Bankamericard. The due date this month was June 3, Metelits received the bill so late that if he had given it 24-hour turn-around it could not possibly have been returned in time.

It was postmarked on May 27 from Chicago to New Jersey. A field headed "billing date" was included on the bill as being May 9. A Bankamericard leaflet description of this field said this was the date on which the bill was prepared!

Now I do not really believe this. It may have been the date on which the bill was scheduled to be prepared – but that is a very different factor. I wonder where Bankamericard print all its bills from May 9 until it posted them on May 27.

Moreover, if in fact this was the date on which the bill was prepared, then I would have expected to see the date in some form punched into the card, along with the account balance, etc.

I checked the punching. It does not seem to me to include any dates. I have checked day of year, and month/day, for the billing date and the due date. I do not see it there. As I see it, in order to run a system which uses the actual preparation date you would probably have it there.

Not that this really matters. The date on which a bill is prepared is irrelevant. The date that matters is the date on which it is presented. This can be regarded with some accuracy as the date it is put into the mail – May 27, or alternatively as the date it is received.

But certainly the idea of being able to stash bills away for 18 days (why not 30 days?) and then claim interest on them is nonsense. It makes the bill "not payable."

So, in the same way that we have an approved practice, let us have a disapproved practice. As a matter of fact let us have two disapproved practices from this one.

One is the question of that heading. Headings should be accurate. Moreover they should be directly relevant. In fact the date a bill is prepared is not relevant to the date it is paid unless it is promptly mailed. It only appears to be relevant in the absence of really relevant data.

In particular, if the system actually does not make provision for system delays, etc. and so will happily fill in May 9 as being the preparation date even though the computer is run on May 10, 11, or June 22, then this is wrong, and should be stopped. How about the following:

Due dates should not be based on inaccurate or irrelevant date fields. If the mailing date is excluded from the face of a bill in favor of some other date, such as preparation date, or end-of-period date, then due dates should explicitly take into account all possible mailing or preparation delays.

Clearly in the Metelits case they did not.

Reasonable Delay

I wonder what you think a reasonable delay is. I work it out this way. I think a person has a right to set a two-week vacation, or business trip. And I think that he has a right to expect our mail service to take at least three working days for the bill to be received and checked, and for the check to be returned.

As such I cannot see any reasonable due date for consumer goods (it differs for firms of course) of under 21 days after it is mailed. They might even add this to the practice. It could read: "Due dates of under 21 days after actual mailing date are not considered reasonable for the calculation of consumer interest payments."

Comments anyone?

Billing Practices

Major Rule — A Bill Should Be Payable (Sanford Rule)

Approved Practice

Synchronizing billing dates with customer's pay periods to reduce accounts receivable, and avoid customer boycotts. (Chamberlain Practice)

Disapproved Practices

1. Due dates based on inaccurate or irrelevant date fields. If the mailing date is excluded from the face of a bill in favor of some other date (such as preparation date, or end-of-period date) then the bill should explicitly take into account all possible mailing and preparation delays. (Bankamericard case.)
2. Due dates of under 21 days after actual mailing date, when used for basing calculation of consumer interest payments. (Taylor Extension)

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CDP Organization

Many Respondents Offer Help

Many offers of help were received in the early voting on the CDP Organization Questionnaire [CW, The Taylor Report, June 9]. Some of the most frequently offered aid was in helping with local chapter organization – which came from Tennessee, Los Angeles, New York, Michigan, Washington, Texas, Seattle, Houston, San Diego, Nebreska, Fort Worth, Oklahoma City – and others. (A list will be published of local contacts when voting is completed).

Other offers of help sometimes raised more questions than they answered. One IBMer offered "My body and mind" – leaving me to guess whether it was his soul or purse that he was defending!

Finance was not entirely ignored by others either. Dele Barrows of Bridgeton, Mo., suggested switching his dues from DPMA, while Stephen Hexton, of El Segundo, Calif., was even more precise with his "Up to $10/year dues (or more for an effective organization)." Well Steve – I haven't talked to anyone, but to be viable I think the dues may be $20.

The Mississippi-based Society of Certified Data Processors, a state-wide organization that started in April, also offered its help through Cheries Guest. And, from the voting, it looked as though some help would certainly be needed particularly about the name. The questionnaire had listed both the society's name and also that of the sponsoring Association of CDP Holders – but voting went strongly for the Society of Data Processors.

One possible way of distinguishing between the groups was suggested by the numerous requests to include the word American in the title.

Otherwise the vote continued to support an organization independent of DPMA. Only one vote, out of 200, was cast in favor of restricting membership to DPMA backed exams, while opening it up to people who passed any approved exam attracted 80 votes, almost as many as voted to make it CDP holders only (110).

The voting on both the questionnaires will be discussed at a meeting during the DPMA Houston get-together, and there should be some real news coming out soon. Thank you for voting (if you haven't voted, there is still time to send yours in).

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Car Pools, DP Go Together

PASADENA, Calif. — Members of the DP community are participating in various efforts to promote greater use of car pools in the Los Angeles area.

Burroughs Corp. is using one of its computers to form car pools for its employees, who are encouraged to join the program through special coffee get togethers and preferred parking places.

Operation Oxygen, a Pasadena non-profit organization set up to unclog the freeways and make life more liveable, is directed by Jack Novack, Burrough's production manager. Another group, begun by Dr. Elliott R. Barkan of Cal State in San Bernadino, has 400 car pool members out of 2,000 students and faculty. Formed as Join Us, the group merged with Operation Oxygen.

The Los Angeles city traffic department is developing a pilot program that would use computers to match 3,000 employees now converging daily on city hall. If the system works it may be expanded to all city, county and federal employees who work in the civic center.

Other carpool programs being formed include four other colleges and universities, Aerospace Corp., San Bernadino, and San Bernadino County.

Survey Shows Privacy Held Less Secure

D.C. Data-Line
By Alan Drattell

WASHINGTON, D.C. — A group of labor, management, and government professionals have ranked the privacy issue among the top 10 policy issues facing Americans today. And 87% of the 103 participants in a special survey think that an individual's privacy is less secure than it was 10 years ago.

The people participating in the study were among those attending a recent forum on "The Privacy Battleground" held here and sponsored by the Transportation Institute and the AFL-CIO Maritime Trades Department.

Seventy percent of the respondents believed that when organizations computerize personal records from manual files they increase threats to privacy.

When asked what they thought was the main reason organizations computerizd personal records, 68% said to cut time and costs in managing manual records, 20% said to increase the amount of information describing each individual in the file.

According to the survey, 30% believed the effect on the individual of general technological change in the U.S. has been mostly beneficial while 21% said it has been mostly harmful. The largest segment, 37%, thought it was about equally beneficial and harmful.

Dr. Alan F. Westin, professor of public law and government at Columbia University, and advisor to the forum, and S. Bisconti of University Research Corp., Washington, conducted the poll.

A large segment of the group indicated personal experiences relating to privacy. For example, 73% said they had experienced billing or accounting errors from organizations using computerized procedures.

A series of 37 policy statements relating to issues discussed during the three days of the forum were asked in the survey. Among them and the percentage supporting or opposing were:

- Law enforcement agencies making conviction records available to commercial agencies compiling pre-employment reports – 77% opposed.
- . . . to credit bureaus – 82% opposed.
- Maintenance by law enforcement agencies of arrest records even when the person is not convicted – 78% opposed.
- Requiring a law enforcement agency to show an individual his own criminal record so he may contest its accuracy and completeness to such agency – 97% supported.
- Collection and maintenance by law enforcement agencies of investigative files about groups which, in the opinion of these agencies, might engage in criminal acts of violence – 32% supported, 51% opposed and 16% uncertain. But if it is in the opinion of a court issuing a warrant, then 60% supported it, and only 21% opposed.
- Use of credit bureau reports by a private employer in order to screen job applicants – 80% opposed.
- Credit bureaus furnishing credit histories on individuals to prospective lendors without informing the persons seeking credit – 92% opposed.

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New Zealand DP Hampered by Personnel Shortage

By Bohdan O. Szuprowicz
Special to Computerworld

AUCKLAND, New Zealand — New Zealand's computer employment, now approximately 4,500, may have to double in the next three years to meet the expected increase in computer installations and to make more efficient use of existing hardware.

No one in this land of mild climate and pastoral beauty knows exactly from where the badly needed programmers and system analysts will come. The computer personnel shortage is already acute with no clear solution.

Probably the main reason for the personnel shortage is the unusually high employment in the country as a whole. In a nation of almost three million people there are only 2,000 unemployed.

Thus it is a sellers' market for skilled people of all types and the shortage of personnel is not unique to the computer industry. Because of rapid growth and lack of previously trained people, the computer industry here suffers out of proportion. The situation probably prevents an even faster expansion in the future.

In New Zealand like everywhere else, IBM dominates the computer market, but ICL, the British manufacturer, has about 27%.

It appears that if you can tell an IBM machine from an ICL, you're hired. Few American computer people are working here, although recently computer users began receiving an increasing number of inquiries from the U.S. and Canada. But while any American programmer or analyst is sure to get a job immediately he must be prepared to earn about 65% of what a comparable position would pay in the U.S.

Thus a man earning $15,000 per year in the States should have no problem getting about $10,000 here, which is considered a good salary considering the liberal social system and the many social services and benefits available. And New Zealand enjoys one of the highest living standards in the world.

Arthur J. Henley, the newly elected president of New Zealand Computer Society (NZCS), with a membership of 1,400, attributes the acute shortage of computer personnel to lack of education and training in computer skills.

Local universities offer only a few restricted courses, and the few computer courses offered by technical schools are insufficient to meet the demand. Training in operations research or management uses of computers is practically nonexistent. Computer manufacturers selling equipment here often send prospective users to the U.S. and UK to obtain the necessary skills.

The country already has about 150 computers installed and has shown a better than 20% growth in installations over the last year. The government provided a major stimulus to computerization in New Zealand and accounts today for 15% of all installations.

New Zealand is a leader is social welfare and the government agencies rely on computers for the administration of social programs.

But this heavy government use of computers for social purposes makes the question of information privacy a hotly debated public issue.

NZCS is taking steps to "prevent computer abuse" by the government. Committees are working on social implications of the use of computers, interpretation of ethical guidelines and implication of possible identification procedures for all of the New Zealand population.

The theme of the society's conference next year is "Computers in the Community" and will focus on education, invasion of privacy and responsibility of companies which use computers.

There is also an interprofessional study group to investigate possible threats to individual privacy.

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COMPUTERWORLD

The 1971 'MORE' Supplement

June 30, 1971

Supplement/1

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6. Thou shalt provide for sabotage detection.
7. Thou shalt establish riot and mob controls for entry and egress.
8. Thou shalt not overlook back-up equipment requirements.
9. Thou shalt generate back-up data bases.
10. Thou shalt be security minded in the physical planning of computer facilities.

. . . By Lou Scoma, President of Data Processing Security, Inc.

'More' Topics Enhance Security

By Edward J. Bride
CW Staff Writer

All roads in this "More" supplement lead to security. If you consider your data center secure, maybe the suggestions of industry experts will make it "more" secure.

The items and procedures in this supplement are those normally budgeted or considered separately from CPUs, CRTs, COMs or core (or other) memories.

Hardly any DP expenditure can be called "incidental," for every item is intended to improve one facet of business operation in these days when DP executives must assure tight *security* despite even tighter money.

Improvements in the *environment* of a DP center translate into a more secure position for the manager concerned about heat, humidity, dust or other contamination.

Proper treatment and use of *accessories* lead to security from data errors and possibly billing inaccuracies and consumer problems.

One article in this supplement will explain what is happening to computer users' power needs, and point the way towards more reliable electric power, furthering users' security from unscheduled downtime or errors.

The methods one user implemented to assure software security will show other users how to recover from natural disasters or other occurrences which might jeopardize security.

There is concern today over the "more" areas of supplies, accessories and environment, as they affect the overall security of data centers. This supplement is intended to make users more informed with the devices available to make their centers operate more effectively.

So, if your controlled environment depends on utility-supplied power and not your own, maybe some ideas here will assure "more" control, for more reliable energy and a better environment.

The procedures of auditing your system and planning for the worse will help you discover some of the methods you can use to get "more" reliability from your system, bringing security from internal hazards.

While you may already manage some type of DP installation, the pages that follow will help you discover how, through better security, accessories and environment, you can get "more" from your computer.

Water Still Best?

Special Fire Needs Cited for DP Users

By Robert V. Jacobson
Special to Computerworld

The best possible protection against catastrophic fire loss is probably provided by an automatic sprinkler system, a conclusion reached after consideration of several facts.

- Automatic sprinkler systems have an enviable record of success where properly installed and maintained. The National Fire Prevention Association (NFPA) reports satisfactory performance in 96.2% of reported cases from 1925 to 1964. Nearly half of the unsatisfactory reports were caused by the water being shut off.

This excellent record might be attributed largely to the "solid state" construction of these automatic systems.

- Automatic sprinklers will provide prompt cooling and so limit corrosion damage.
- No significant personnel hazard is involved. Given modern construction, grounded metal cabinets and power cables under the raised floor, the possibility of electric sho should not cause alarm.

Furthermore, in the event of a catastrophic fire, it should be possible to cut off electric power with an emergency power disconnect switch, a mandatory feature of any computer room.

- Automatic sprinkler systems can be refurbished quickly with little or no break in fire extinguishing capability.
- The cost of installation is relatively low, approximately $1 per square foot, and the cost to refurbish after a fire is extremely low.
- The probability of a false discharge is very low. Sprinkler pipes and heads are ruggedly constructed and when properly installed should give little or no trouble.

The ideal sprinkler system for data processing is the pre-action with recycle type which works in the following manner. Pipes are normally dry. If heat detectors associated with the sprinkler heads detect a rise in temperature, a solenoid valve opens allowing the pipes to fill.

When the heat melts a head linkage over the fire, water is discharged. After the head detector senses a temperature drop, the solenoid valve closes and stops the water.

Pre-action is preferred to dry pipe systems because with the latter there is a significant delay between the time the head opens and water discharges. The fire has more time to get established, which may cause additional heads to open, thereby reducing effectiveness if water pressure is low and also increasing water damage.

Furthermore, pre-action prevents the release of water if a head is accidentally broken. The recycle feature will limit water damage without reducing subsequent fire extinguishing capability.

Pre-action/recycle systems should include interval batteries for emergency power and will fail safe. Should individual components of the control system fail, at the very worst the system will revert to conventional wet pipe operation and so still provide a high level of protection.

"Higher" Halon Cost

Systems which use halogenated agents such as Halon 1301 appear to have several drawbacks when applied to computer room protection.

The cost is significantly higher, approximately 50 cents per cubic foot or 55 per square foot with a 10-ft ceiling to floor slab dimension. Recharging is also costly, about one half the initial cost, and until the system is recharged it offers no protection although there is always a significant probability that the initial fire may reignite.

Continued on Supplement/5

User Can Prevent Power Brownouts, 'Transients'

By Ralph A. Amos
Special to Computerworld

Aside from the prospects for continued brownout conditions and high frequency of equipment failure due to overloading, the computer user is faced with power problems over which the utilities have no control.

Long-term outages lasted a minute or longer, and momentary outages lasting from about 100 msec to one minute are quite obvious as they will be visually discernible. They will also necessitate considerable rerun time whenever they occur.

High-speed power transients, lasting less than 100 msec are not normally visually discernible and thus can be more troublesome in today's advanced computer hardware.

This type of transient may cause nothing more serious than a misspelled name or a word in a printout, or it may be of such magnitude to cause a complete program interrupt. This "Class III" (short duration) problem has been largely ignored by both the utilities and hardware manufacturers until the last two years.

Logging Class III faults with high-speed voltage monitors indicates that statistically the problem is pretty much the same from one utility to another, and from one geographic location to another.

High-Speed Switching

This type of fault is most commonly the result of high-

Continued on Supplement/6

True Jeopardy 'Inside,' Auditor Says

By Richard A. Hirschfield
Special to Computerworld

The greatest exposure in on-line systems often comes not from vandalism or the theft of a tape, but from illegal or unauthorized access through a remote terminal.

Unauthorized access may be accidental, or worse, may be clandestine and go unnoticed or unreported. Does it happen? You bet! Often? No one really knows.

Just reflect on the octopus computer with its two-way tentacles stretching your vulnerability in ways you never thought of before.

The on-line control problem has four dimensions:

- The prevention of illegal or unauthorized access to the computer and its data files.
- The control of data transferred from remote locations to the central computer complex.
- Backup and recovery systems for the computer complex.
- System auditability.

Assuming the necessary controls are designed into the system to prevent unauthorized or illegal access, the user must still concern himself with securing the operational environment.

Several levels of controls are necessary, the most common being the familiar terminal and line-checking features such as horizontal and vertical parity, bit counts and sequential message numbering.

Some less familiar yet potentially critical controls over data transfer should be addressed, these being computer logs, encrypting of data and closed loop verification.

Computer Logs

In an on-line system a complete log should be kept within the computer of every terminal access to the computer to record the time of access, the terminal number and user password, and the purpose of the access.

It must be maintained on a real-time basis and information printed out from it on a daily basis for review. Items of special interest, such as attempts to gain access to files with illegal passwords, should be flagged.

Continued on Supplement/2

Dirt, Smog, Heat, Static All Threaten Disk Accuracy

By Ron Kubec
Special to Computerworld

The introduction of rotating memories into data processing has necessitated more demanding requirements for both manufacturer and user to create and maintain acceptable operating environments for these devices.

Data security is not just a matter of protection from fire and theft.

There are two major criteria for generating a suitable operating environment for rotating memories – ensuring read/write accuracy in operating and protecting the machine and the recording media during both active and inactive periods.

Read/write accuracy is, of course, the primary objective in the design, production and maintenance of the devices. Therefore, it must not be disregarded when using the drives.

This requires the control of the electrical and magnetic environment. Electrical noise, whether generated by nylon panties or less exciting devices such as electric erasers, must be controlled.

Excessive magnetic fields can cause erasure of recorded surfaces or distortion of data as it is transmitted.

In protecting the machine and the recording media during active and inactive periods, consideration must be given to environmental factors.

These may be represented by two types: particulates, such as debris and smog; and chemicals, such as sulfur and salt.

Particulates can be introduced through dirt on parts in the assembly area, through bad design (for example, excessive use of anodized parts), or they may just fall out of the air. Hard, sand-like particulates are especially bad because they tend to become imbedded in the disk and lead to data errors.

Flying a read/write head in a smoggy environment causes this material to be deposited on the leading edges of the head. Eventually this build-up reaches a level that causes the head to crash into the disk.

All of these problems are overcome by cleaning parts, assembling them in clean rooms, and providing clean, positively pressurized head/disk area, and by using absolute filtration systems.

Control of temperature and humidity is a major influence on the interchangeability of disk cartridges and packs among drives, and is a prime constraint to overall system performance.

Extreme temperatures affect the performance of rotating memories mechanically as well as electrically. Low temperatures reduce the effectiveness of lubricants, contract dissimilar materials, and cause wire insulation to become inflexible.

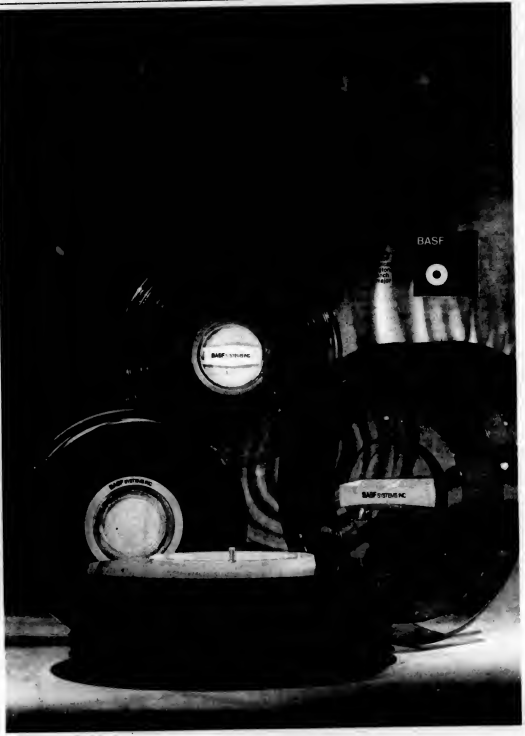
High temperatures cause electronic components to perform erratically and can melt insulation.

Humidity must be maintained at a level that does not permit condensation and static electricity.

Disk cartridges or packs should be kept at or near room temperature. This will insure that their temperature is not too greatly different from that of the disk drive enclosure, and thus will prevent condensation and expension or contraction of materials during drive operations.

This helps to guarantee the ability to interchange cartridges or packs among different drives without causing errors.

Ron Kubec is senior engineer at Iomec, Inc.



On-Line Environment Is Special Hazard, Demands Cautions

Continued from Supplement/1

In addition to the log, the use of closed loop verification can insure that all data transmitted to the system has been received as transmitted. This confirmation, transmitted from the computer to the terminal contains a message number, the time of day, and a character or bit count which should correspond to the character and bit count transmitted.

All public lines are subject to being tapped or electronically monitored without the user's knowledge. Even private lines are not completely secure and microwave may prove to be the least secure of all.

Thus, when sensitive data is transmitted, the user must realize that through a concentrated effort on the part of a malicious intruder, this data can be obtained. If the data is that sensitive, then the only recourse is to encrypt the data.

The use of encrypting is growing among many companies which transmit confidential data and of course is heavily used by the U.S. Government. Many users have even begun encrypting the actual data files in the computer for maximum security.

The subject of backup systems is important in an on-line environment. Often the applications processed and their immediacy do not allow the system to be down for any extended period of time. Depending on the criticalness of the processing, on-line systems may have to be duplexed or in some cases even "triplexed" to assure an uninterrupted flow of processing.

An often overlooked point is that if the user is to go to this expense and difficulty he must also consider the backup requirements of his power supply, air conditioning, etc., and provide proper switching mechanisms to assure that backup transfer can be affected when necessary.

Auditors should be able to review the integrity of the controls and security of an ongoing system.

The effectiveness of the controls should be determined to ensure they are properly working and also to detect any changes to system control and security levels. With less hard copy being produced, the traditional audit trail is vanishing and the auditor must develop new techniques for validating the effectiveness of new controls and security requirements.

The on-line user should realize that implementation of such measures is complicated and expensive and can add significant overhead to systems operations.

Richard A. Hirshfield is executive vice-president of Computer Audit Systems, Inc.

Editor's Note

The "More" supplement was compiled and edited by Staff Writer Edward J. Bride, who joined CW in November 1969 after being discharged from the Navy.

Bride's Navy training included weapons guidance systems, analog computers, personnel, public affairs and DP administration.

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Paper Affects Printer's Effectiveness: St. Regis

By Richard Jordan
Special to Computerworld

Because of collating, cost, and clarity problems associated with multiple-copy computer printout, the trend has been for forms designers and systems analysts to specify fewer copies, not more.

There are still many instances when six or more copies are required, and carbonless or carbon/bond paper can help alleviate some of the headaches.

In the case of high-speed computer printers, there are several factors that affect the ability of any given printer to reproduce legible prints, including the make and model of the printer itself, the setting for print density and the distance between the printing mechanism and the paper.

Another factor is the mechanical condition of the printer.

Chain-type printers generally reproduce a more legible print than do drum-type printers. The type of ribbon used on the printer also affects the printout. Thin, 3 mil, nylon or plastic-based ribbons generally supply a better print and more copies than do thick, fabric-based ribbons.

It is anticipated that shortly, all carbonless papers will be priced to compete favorably with many present combinations of bond and carbon. At that time the volume required may

be many times the quantity presently* in use. In addition, new applications are being found every day.

Applications enabling the computer to scan optically either handwritten copy or copy reproduced by a machine are very promising applications. Thus, carbonless papers can be used not only for output, but also for input.

Richard Jordan is Product Development Manager of the Graphics Paper Division, St. Regis Co.

New Carbonless Use Seen, 'Paper Cheap,' Says NCR

By J.M. Wikoff
Special to Computerworld

Compare the basic price of a continuous form printed on carbonless paper and a form using bond and one-time carbon, and the carbonless form will usually be more expensive. But more and more systems and DP managers are realizing that the initial price of the form is not the total cost.

To compute the true cost of a form one has to add the cost of the handling involved. In other words, how much does it cost to decollate the form (there's an extra step here with a bond and carbon form)?

How much time is involved with any hand entries which must be made? What are the cost consequences for errors from carbon paper smudge?

The true cost of a form thus goes far beyond the basic price, and costed correctly, a carbonless form will usually cost less.

It's the old story – paper is cheap, but people are expensive. In fact, the people cost is becoming so important that some installations are sending out continuous forms just as they come off the printer and forcing the receiving department to do its own decollating.

The difference between the basic price of carbonless and bond and carbon forms has been narrowing in the past few years.

The convenience factor has been one of the chief advantages of carbonless continuous forms, and it really becomes a factor when the output document is destined for the hands of the general public, where one does not want the message to be smeared or run the risk of an irritating carbon smudge on the consumer. As more varied uses are developed for computers, the forms industry is required to keep pace. Carbonless paper is being increasingly used because it is uniquely suited to many of these advanced applications.

OCR, turnaround documents and unitized mailers are three such applications.

J.M. Wikoff is a forms specialist at the National Cash Register Co.

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Recovery Possible? Not Without Backup

By Harold Weiss
Special to Computerworld

Just about every month a number of disasters afflict DP installations. Most are not reported in the press and are not widely known.

If the computer center is physically destroyed or seriously damaged, it will be very costly, requiring perhaps millions of dollars to return to the *status quo*, if it can be done at all.

There is a serious question about whether recovery from true disaster is indeed feasible for the highly integrated computer user, given even what is considered good risk practice in the computer field today. Would the organization have to shut down for a lengthy period of time until adequate computer service was restored or would it pile up a fantastic backlog of data processing? How efficient would it be during the restoration period? How much would it cost to recover if recovery was still possible?

It is predicted that a number of organizations will go out of business in the next decade because of major DP disasters.

Fallback to manual or other methods of data processing is rarely feasible in the event of true EDP disaster. Remote backup installations will not normally begin to solve the problem either.

Other parts of the organization besides data processing must be involved in disaster planning, including top management and insurance, security and records specialists . . . even the janitor may have a constructive role to play. A crash program of risk reduction is probably in order for every computer user.

Harold Weiss is director of the Automation Training Center.

All Agents Have Place Fighting Computer Fire

Continued from Supplement/1

The heat of the fire may cause the agent to decompose into highly corrosive and toxic compounds.

If the agent is released quickly through a well engineered array of nozzles, effective concentrations can be achieved in the room air. Tests with simulated computer cabinets, however, have cast serious doubts on the ability to achieve good distribution inside the cabinets unless cooling fans are operating. There is a real danger that fire has also made these fans inoperative, so it seems imprudent to depend on halogenated agents to deal with such fires.

Also, the Halon discharge is controlled directly by the smoke detection system and each false alarm, if not promptly aborted, leads to an expensive recharge. Over-zealousness in aborting discharge may some day lead to undue delay in attacking a fire.

Room Size a Factor

Tape and disk stofage areas present quite a different picture. If one follows NFPA Standard No. 75, each room is no larger than 5,000 cubic feet, so even distribution can be more surely accomplished.

If electrical equipment such as tape cleaners are not kept in the room, the problem of hard-to-extinguish electric cabinet fires is eliminated. The room then does not need extensive air conditioning ducts, and should be easy to seal off to that the halogenated agent has ample time to work.

Halogenated agents offer no damaging side effects to tape and disk contents – *a major advantage.*

With regular inspection, Halon 1301 would appear to be an ideal fire protection system for tape and disk storage rooms.

Carbon dioxide systems are similar in construction and operation to Halon 1301 systems but cause no direct damage and are free from corrosive or toxic by-products. On the other hand, at effective concentrations the supply of oxygen in the air is too low to sustain life. There is also the possibility of fog formation which can make escape difficult.

Carbon dioxide systems are about 10% less expensive than Halon 1301, but considering all factors, Halon 1301 appears to be preferable to carbon dioxide for the protection of tape and disk storage areas.

Robert V. Jacobson is president of Bradford Security Systems, Inc., of New York (formerly Bradford Associates, of Wellesley, Mass.).

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User Tells How 'Lucky' Accident Brought Awareness

By Philip J. Berg
Special to Computerworld

A "lucky" accident – a burst water pipe – taught our suburban Washington data center a lesson about backup, and an airplane crash into our Princeton, N.J., offices reiterated the need for security precautions of data.

The following list is proposed as the minimum requirements in order to prevent, or minimize, physical damage in cases of catastrophe, power problems, or just plain bad luck.

It is vitally important to delegate specific responsibility to all personnel, to avoid the disastrous effects that panic can cause to both lives and property. A "plan of action" must be devised.

The surest security measure is backup systems, but the amount and frequency of backup should be based on the amount and frequency of system activity (for example, if certain files are updated only once a month, a backup tape for that file need be generated only monthly).

Closely allied to generating sufficient backup is providing safe storage for that backup, with duplicates in remote locations.

With cost a consideration, users should know exactly what should be backed up. This is a function of how easily the original data could be recreated if it were destroyed.

Evaluate protective measures periodically, and attempt to recover data from existing backup. This will reveal strengths and weaknesses of existing procedures.

Avoid program interdependency; if "program X" must be available to regenerate from existing backup tapes, what happens if "program X" is destroyed?

Purge backup of unessential material, to keep this data accurate and up-to-date. Be absolutely certain that any data which is evaporated is truly useless.

Document procedures comprehensively, and safely store the documentation.

All operations staff must be familiar with procedures.

Find out if there is another DP facility with comparable equipment in the vicinity, and if possible, a mutually advantageous agreement should be arranged if damage occurs to either party.

Structure systems' basic designs so they inherently provide a certain measure of backup. The entire backup operation can be automated to reflect the actual frequency of activity.

By eliminating some of the manual aspects of data center security, the entire system becomes less error-prone.

Philip J. Berg is Autoflow Technical Manager for Applied Data Research, Inc.

User Power Concern Continues

Continued from Supplement/1

speed switching of the utilities to correct the local power factor and/or voltage as the load changes during the daily cycle. It apparently shows little geographical variation.

It has been difficult to establish any exact correlation between these high-speed disturbances and computer errors. EDP managers, using an uninterruptible power source (UPS), generally feel that unexplained errors are noticeably less. A few contend that the UPS is justified on this basis alone.

If you do not already have such a system on order, do not expect to get one installed this summer. You do have time, however, for a thorough management evaluation of the critical level of your DP operation in relation to the effect future power problems will have on the continuity of your system.

The interim suggestions and recommendations below should help you through the critical period until suitable power arrangements or power systems are assured.

- Check system voltage at distribution panels in the computer room. If the voltage is lower than specified by the computer manufacturer, it can usually be raised by changing transformer taps in the electrical distribution system supplying the computer. There may be three possible points this can be accomplished: the computer room transformer, the main building transformer or the utility company's transformer.

This operation is a very simple and inexpensive one, requiring about eight hours of labor, and can be done by in-house electrical maintenance personnel or an outside contractor. The utility will normally change transformer taps at no charge if you request it.

A power off time of at least one hour is required for tap changing.

You should first determine utility voltage range over at least a 24-hour period and a full week if possible. This can be done on a spot check basis or by a recording voltmeter and will determine which tap setting should be used. Utility voltage will usually increase during off peak loading. (Late at night and weekends). Excessive voltage levels can damage your hardware.

- Check your complete computer circuit for overloading from service entrance to computer room distribution panel. Any cables or circuit breakers which feel hot to the touch should be checked with a portable ammeter for excessive load.

Overload Is Problem

The power check is quick and inexpensive. Solving the overload problem may not be so simple. The solution can vary all the way from cleaning breaker contacts and ventilating the power distribution area, to a new service.

- Check ventilation in your power panel area. Low voltage conditions usually cause wiring and circuit breakers to run hotter than normal, increasing the chances of the breaker tripping and "dropping" your computer. The solution to this problem is usually relatively simple. Installation of a fan or tapping a nearby air conditioning duct may suffice.
- Redistributing your work load so that your maximum production load does not coincide with the utilities maximum load. This will reduce the probability of a power interruption during critical work periods. You could encounter personnel problems with this suggestion because it will necessitate more of your people working the two night shifts.

These suggestions will minimize the effect of brownouts and hopefully reduce potential outages.

Ralph A. Amos is vice-president of Power Systems & Controls, Inc., Richmond, Va.

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Random Notes

Waste Management Package Plans 'Recycling' Pickups

SUN VALLEY, Calif. – Operators of multiple truck waste pickup and disposal fleets can gain better control over their operations with the management information system developed by Computer Management Systems (CMS).

In addition to accounts receivable and sales analysis processing, the system includes "objective routing control" to group pickups of similar salvageable items for recycling. The system is operational on an NCR Century 200 and is available for franchise from CMS at 9200 Gleneoaks Blvd., 91352.

DOS Users Get Mark IV Version For Processing in Foreground

CANOGA PARK, Calif. – DOS/360 installations can use a new version of the Mark IV File Management System from Informatics Inc., in either foreground or background partitions.

The foreground capability includes all the capabilities of the standard Mark IV, but separate tapes are required for the two foreground partitions. The firm is at 21050 Vanowen St., 91303.

Dartmouth T/S Raising Rates To Recover Missed Billings

HANOVER, N.H. – Users of the Dartmouth Time-Sharing System face an upward revision in rates but details of the increase have not been completed,

The increase in rates will be needed, DTSS said, to offset the effect of a programming error, since corrected, which allowed up to 40% of CPU time used to go unbilled for a period of several months.

Cyphernet Adds Graphics Service

ANN ARBOR, Mich. – Users of the Cyphernet time-sharing service can generate high-quality X-Y plots interactively and have results displayed on in-house CRT terminals or on plotters at network computer centers by using the Cyphergraph program.

Cyphernetics is at 333 Maple Village Center.

Shipbuilders Get Library

MINNEAPOLIS, Minn. – Shipbuilding groups can avoid the cost of developing design assistance programs by using a library available on the Cybernet time-sharing network of Control Data Corp.

The library, organized by the U.S. Naval Ship Systems Command and the Shipbuilding Industry Advisory Committee, includes programs to study pipe sizing, hull characteristics, electrical systems and propeller parameters and performance calculations. CDC and Cybernet are headquartered here.

Building Design Aided on Hiso

MINNEAPOLIS, Minn. – Engineers and architects are able to plan elevator systems and environmental control systems with the Building Utilities Design System (Buds) on the Honeywell Information Services Operation network.

Buds permits analysis of building energy consumption and demand, and analysis of hydraulic or gas distribution networks, Hiso said. There are 11 programs in the system and most do not require user knowledge of programming. Hiso is at 2701 Fourth Ave., 55406.

Forecasting Included

Inventory Keyed to Customer Service

By Don Leavitt
cw staff writer

BURLINGTON, Mass. – An inventory management system that includes forecasting modules and user-defined parameters for level of customer service is available for medium-scale 360 installations from Manufacturing Management Sciences Inc. (MMS).

The forecasting modules analyze demand history and select the most appropriate from among seasonal, trend, "lumpy" or horizontal forecasting models. The user may force selection of a particular model, if factors that dictate such a choice are not reflected in the data. Adaptive smoothing techniques are used by the system to minimize forecasting errors, MMS said.

The MMS package creates and maintains all files necessary to operate the inventory system. The system has four major files to utilize a chaining technique for random processing in any sequence.

In addition to inventory master and open orders and reservation files, the system supports a warehouse file showing inventory by stocking point. A period transaction file contains full audit trails so that transactions can be traced. Data can be transferred to a history file for long-term use. This file contains 24 periods of previous demand plus monthly projection information, the company said.

The system not only allows the user to define the level of customer service to be maintained, but computes the safety stock level based on either time service or unit service, an MMS spokesman said.

The system is designed to run on a 64K IBM 360 with three 2311 disk drives or a 2314. Written in Cobol, versions are available for either DOS or OS. The floating point option is required.

The package costs from $20,000 for a single warehouse, DOS version to $35,000 for a multiple warehouse, OS system.

MMS is at 279 Cambridge St., 01803.

Seven Tasks Run Simultaneously Under DOS TP Control Software

BALA CYNWYD, Pa. – Seven application subtasks can be run asynchronously in an IBM DOS/360 environment, with the Teleprocessing/Master Control Program (TP/MCP) from Automated Financial Systems Inc. (AFS).

TP/MCP is written in Assembler Language utilizing IBM's Basic Telecommunications Access Method (BTAM). The monitor system is designed to meet all the "front-end" requirements of an installation, and supports any IBM-compatible terminals, AFS said.

The program is said to support serially reusable, non-reusable, reentrant or self-relocating applications written in Assembler, Cobol or PL/1. No changes are said to be required in the user's coding.

TP/MCP itself uses reentrant coding wherever appropriate to allow more effective use of monitor facilities.

The opening and closing of communication lines and files, and other elements for control of the system, can be handled by an operator at a master terminal or at the CPU.

By duplicating on disk the coding of each application and/or module of the monitor as it is accessed, TP/MCP allows virtually instantaneous recovery from execution errors. If the problem arises in an application, for example, a core dump is put out on tape or disk and the system goes on to the next task. The next time that program is needed, the "clean" duplicate copy is used, an AFS source said.

TP/MCP requires at least 27K under DOS/360. A more typical core requirement would be 80K which, the company said, would support seven or eight applications, two or three terminals and 15 files.

Five man-days of support are provided in the base price of $18,500 but customization and special installation costs are additional. Lease plans are also available from AFS at One Decker Square, 19004.

'Faas' Calculates Depreciation

NEEDHAM, Mass. – Financial managers with access to an IBM 360 as small as an 8K Model 20 can use the Fixed Asset Accounting System (Faas) from McCormack & Dodge Corp. The system includes separate accounting for tax and bookkeeping purposes.

In addition to the tax and bookkeeping depreciation calculation programs, Faas has programs to provide projections for analysis and budget preparation. Various programs list the asset file sequentially by item number within location, by account, by acquisition date or by other significant characteristic.

Another program calculates depreciation through date of retirement upon the complete or partial disposal of an asset. Assets acquired prior to the Tax Reform Act of 1969 will be analyzed for possible Investment Tax Credit recapture, a spokesman said.

The system can be run on a card-oriented 360/20 with 8K of memory or a tape/disk-based Model 20 with 12K. A DOS version functions on a 360/25 or larger CPU under DOS with 24K and three tapes or two disks. The OS version takes 64K of memory on a 360/30.

The 360/20 package costs $495. An RPG-based Faas for the larger CPUs costs $695. Source programs written in Cobol are available for $745, from the firm at 19 Brook Road, 02194.

Banks Handle General Ledgers With Program on National CSS

WAKEFIELD, Mass. – Small to medium-sized banks with already crowded in-house equipment can run their general ledger accounting on a time-shared basis, with a program developed by TLM Systems Associates and available on the National CSS network.

The package is available from TLM for $1,000 plus customization, plus a monthly maintenance and use charge of $100 to $150, once it has been implemented on National CSS. The network charges separately, at its standard rates, for machine time and other facilities used while running the TLM system. TLM Systems Associates is at 2 Smith St., 01880.

'Scribe' Manages Subscription Accounts

NEW YORK – Publishers can implement most of their subscription fulfillment and accounts receivable processing on s medium-scale IBM 360 or RCA Spectra 70 with the Scribe package from PDA Systems Inc.

The package provides all types of mailing labels for the publication's own operations, billing for both subscriber and advertiser accounts, and special labels to handle reader inquiries.

An addition to billing, the accounts receivable portion of Scribe ages outstanding balances and handles commissions for commercial accounts.

Written largely in Cobol, with some subroutines in Assembly Language, Scribe has been implemented on a 65K IBM 360/30. Adapting the package to the RCA Spectra 70 should be relatively easy, according to the company. The $3,200 package can be ordered from 12 East 86th St., 10028.

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Rochester to Charge 300% More Than Bell, PSC Told

ALBANY, N.Y. – The Rochester Telephone Corp. proposed tariff sets rates so high that it "gives only lip service to interconnection," according to Curt Gamlin of Telcon Associates.

Testifying at the latest sessions of continuing New York Public Service Commission hearings [CW, May 12], Gamlin said the proposed Rochester Telephone charges for lines with customer-owned data equipment are 300% of similar rates set by New York Telephone Co.

Commenting on Rochester's proposed semiannual inspection of customer-owned equipment, Gamlin told the PSC that in many cases both Rochester-provided and customer-provided units will be identical.

Citing the plans of Neisner Bros., Inc., a local data user, Gamlin said Neisner would use Northern Electric equipment when the proposed tariff takes effect. The telephone company would probably install the same equipment, Gamlin said.

The major difference would be that if Neisner installs the equipment under the tariff it would be subject to higher rates and twice-yearly inspections. But if Rochester Telephone installs the units, "they may inspect only every two years," and charge lower rates, Gamlin said.

Rochester Telephone did develop a "simplified network [protective] device," he said, but there is no justification for the carrier to set anything more than a nominal monthly charge.

Rochester Telephone disclosed that it will allow the multiplexing of data lines equipped with customer-owned equipment.

Most of the cross examination of Rochester Telephone officials has been completed, a PSC spokesman told CW. The next sessions in the hearings are scheduled to begin here July 13.

USITA Warns Members

One User Can Force Interconnection Tariff

By Ronald A. Frank
CW Technical News Editor

WASHINGTON, D.C. – The U.S. Independent Telephone Association (Usita) has told its member companies that just one user asking for interconnection of customer-owned equipment can force a carrier to file a tariff and offer new services.

In a recent handbook on interconnection issued by Usita and sent to member companies, the independents were told they will have to prepare for the interconnection of noncarrier devices on their lines.

To assist Usita members, the handbook lists a set of questions which must be answered by independent phone companies before they can determine a position on interconnection.

In a section on customer relations, the handbook tells the independent carriers that they will now have to compete for the user's business. The handbook advises the phone companies to concentrate on "giving the customer what he wants."

Phone companies planning to compete with other suppliers for interconnected users should review their service, the Usita book said. Among problem areas it advised the independent companies to avoid were: service failures, billing errors, missed service dates, long lead times for given services, slowness to provide new services and lack of "prompt and professional response" by sales, business office and maintenance personnel.

Although AT&T and the Bell System companies have offered interconnection tariffs in most areas of the country, the independent carriers have for the most part not yet formulated interconnection tariffs. Exceptions are General Telephone (GT&E), and Rochester (N.Y.) Telephone Corp. which has recently proposed a simplified tariff for its users.

Most of the smaller independents have interconnected users on special assemblage, or individual agreement, arrangements, thereby avoiding the necessity of filing a general tariff with state regulatory agencies.

The Usita handbook includes a list of connecting arrangements available from independent suppliers. Based on a Usita survey of member companies, the list includes Bell-equivalent connecting arrangements from Elgin Electronics Inc., Waterford, Pa., Ford Industries Inc., Portland, Ore., and Pulsecom, Alexandria, Va.

Shared Line Use Planned by RCA

CHERRY HILL, N.J. – RCA Service Co. has become "very interested" in setting up a group of data communications users to share carrier facilities under FCC Tariff 260. Provisions for such a group are expected to be established "in the near future," the company said.

Admitting that such shared use of its facilities would also reduce its own costs, RCA said it would provide potential savings for the other users.

Other efforts to set up similar groups have had little success, according to one industry source. Data users who are interested are often already involved with Telpak service, he said. Until the controversy surrounding sharing under that service has been resolved by the courts or the FCC, users apparently are unwilling to get too deeply committed to other line-sharing plans.

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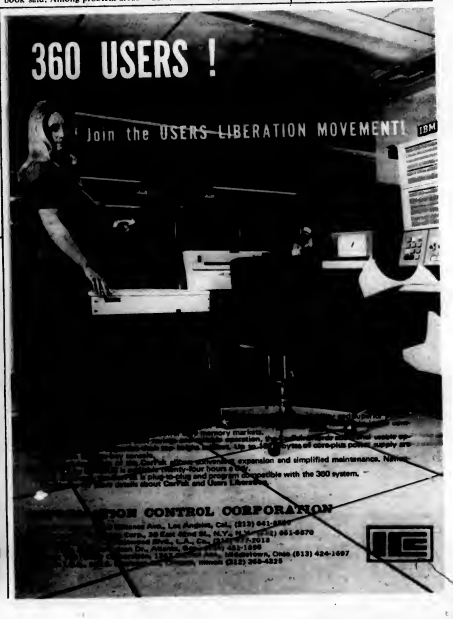

Bits & Pieces

Classified Ad Writing Simplified by CRT System

LONDONDERRY, N.H. – The EDS 5700 Ad Taker Terminal from Hendrix Electronics is used with the earlier EDS 3400 Data Base File System, to provide an interactive classified ad composition system for newspapers. The system enables a clerk to type, and verify, and edit an ad, and receive billing and credit information.

In orders of eight or more, the 5700 goes for under $5,000, while the 3400 controller varies in price from $59,000 to $130,000, for interfacing from 11 to 63 terminals respectively. Delivery is 90 days from Grenier Airport, here.

Fairchild Expands Keyboard Line

PLAINVIEW, N.Y. – Fairchild Camera and Instruments' Graphic Equipment Division has added six models to its Electro/Set line of electronic keyboards. The 450 Editor has a floating display and paper tape reader, to improve speed in making corrections and producing a clean tape.

Other configurations include multiple-code key and programmable multiple-code key combinations. Prices range from $3,965 to $6,985. Delivery is in 60-90 days, from 221 Fairchild Ave., 11803.

Astrosystems Adds Data Logger

LAKE SUCCESS, N.Y. – Astrosystems' AD1000-125 Data Logging system accepts multiple digital and analog inputs from a mix of process transducers and digitel devices and, at present intervals, prints or sends to a CPU a three-character reading for each of the inputs, as well as the time in hours and minutes. There is also a three-digit visual readout.

The system, with either a TTY or a computer interface, costs about $12,000. Delivery is quoted at 120 days. Astrosystems, Inc. is at 6 Nevada Drive, 11040.

Litton Offers Business Computers

CARLSTADT, N.J. – Four hard-wired business computers from Litton Industries Automated Business Systems Division cost from $14,900 to $17,150.

The ABS 1220-1, 1220-2, 1221-1, and 1221-2 are firm-ware machines, with program logic installed and modified at the factory. Data and variables are under operator control, and can be entered from edge punched cards, paper tape or the keyboard.

Maximum printing speed is 35 char/sec, and top read/punch speed is 50 char/sec. The firm is at 800 Washington Ave, 07072.

Sanders Has Intelligent Terminal Series

By Michael Merritt
CW Staff Writer

NASHUA, N.H. – Sanders Data Systems has entered the programmable terminal systems fray with the "Can Do" Series 800.

Based on the 800 microprocessor, the system can be designed for stand-alone or clustered terminal use, has communications capabilities, and some data-manipulation and arithmetic software. The system is useful in communications, batch processing, peripheral control and data entry and manipulation applications.

The 800 is a 16-bit instruction word serial processor that operates on 8-bit data. The semiconductor memory is expandable to 64K, 16-bit words, arranged in 16, 256-word pages.

Instruction rate is 165K instruction/sec, about 6 μsec/instruction. The instruction set includes 16 operation codes, seven register-to-register instructions, and one each for a family of microinstructions and extended operation instructions.

There is hardwired ADD and SUBTRACT, but multiply and divide are software routines.

The microprocessor is included in the skin of the stand-alone 804 CRT terminal, which sells for $5,380 and rents for $195/mo. It is also the basis of the separate terminal and communications processors, which sell for $5,900 and $4,900 respectively.

In a cluster mode the system is composed of eight 860 terminals which are 804s without the microprocessor, and sell for $1,100 and a terminal and communications processor.

There is another CRT terminal, the 802, which has the processing capabilities of the 804 but is not programmable. The 802 sells for $4,800 and rents for $150/mo.

Peripherals include a $2,600 300 card/min card reader, including adapter; a $2,540 dual cassette tape transport with adapter; and three printers, ranging in speed from 30 char/sec to 200 line/min, and in price from $3,200 to $9,450 with adapters.

There is a charge for keyboards, as well.

There is also a communications line controller that interfaces with 360s and 370s under BTAM, QTAM, TCAM or user-developed access methods. An MICR reader is also available.

An eight-terminal cluster system would cost about $30,550, or $865/mo, depending on user needs. By way of contrast, an eight terminal Four-Phase System IV-70 configuration would cost $15,340, or $824/mo, with 6K or ROM and 6K of read-write memory. On the other hand, eight Viatron System 21 terminals, each with two tape cassettes and communications adapters, would cost about $30,000.

First delivery is scheduled for December from D.W. Highway South, 03060.

Lockheed to Enter 2365 Battle, Underprices IBM, Ampex, Cogar

LOS ANGELES – The least expensive replacement yet for IBM's 2365 core memory box for 360/65s, 67s, 75s and 85s is being built by Lockheed Electronics.

The MM-365 will sell for $200,000, while IBM's price is around $390,000. The Ampex 2365 replacement sells for $308,000, and the Cogar 70 goes for $210,000.

The Cogar unit, scheduled for delivery in August, is a semiconductor memory, while the IBM, Ampex, and Lockheed devices all use ferrite cores. Ampex apparently has the only replacement unit installed to date.

Lockheed's MM-365 has a 700 nsec cycle time and a 350 nsec access time, for a memory of 256K – the specs expected for a 2365 replacement. Standard features include a system exerciser, storage protect, and fetch protect for 65s and 75s.

Options are two- or four-port entry, automatic error correction, and a 370 compatibility conversion feature.

The Lockheed unit "uses half the power, generates half the heat, weighs half as much, and requires one-third the floor space of the IBM system," the company claimed.

A prototype is scheduled for the end of the summer, and first installation for December.

Lease rates will be $7,900/mo on a one-year lease, $7,000/mo. on a two-year and $6,000/mo on a three-year lease.

Maintenance will be provided by 20 people in eight offices to service users of large 360s clustered in three fairly compact geographical areas, according to the firm. Lockheed is at 6201 E. Randolph St., 90040.

Logic Offers Key-Entry System

CHERRY HILL, N.J. – Logic Corp.'s LC-700 key-to-disk data entry system is designed for medium-size users who need from nine to 20 input stations.

The 700 central controller includes a Varian mini and interfacing for disk, tape, and printer peripherals.

The disk file is said to hold over 1,000 program formats, which can be modified through an interactive software supervisor included with the 700 system.

The disk has a capacity of either 7.25M 8-bit bytes in a 2311-type configuration or 29M bytes in a 2314-style unit. Access time of the 2311-type is 32 msec. All LC-700 disk packs can be read on IBM or RCA drives, for backup, the firm said.

The tape station offers read-after-write. Tape output is IBM-compatible 7- or 9-track 200 to 1,600 bit/in.

Each station has 14 control, 10 numeric, and 27 alphabetic keys along with a non-CRT display panel that signals last character, errors, insert, search edit data, verify, and other instruction and control information.

Data entered at each station via 029-compatible keyboards can be verified immediately through rekeying. Verification can be done later from any key station using editing or selective field keying operations in batch mode.

The central controller rents for $1,150/mo, and stations are available at $100/mo, on two-year lease. Delivery time is 90 days, from 21 Olney Ave., 08034.

Comress Improves Dynaprobe

ROCKVILLE, Md. – A full-blown Dynaprobe-7800 CPU performance monitor from Comress can analyze up to 128 system functions simultaneously.

The complete system which upgrades the earlier Dynaprobe system, includes a D-7817 magnetic tape unit, and four D-7816 Monitor/Tape Buffers, as well as interfacing.

The full boat with four multiplexed 7816s provides a total of 64 high-speed and 24 low-speed counters, as well as 128 probes.

The D-7800 uses the "Mini-Probe" which weighs less than 1 oz. A real-time clock and external time synchronization are standard features, as is the multi-function register, which permits the read-out of strobed data from CPU registers being tested.

The 128-probe system costs about $90,000, Comress said. A basic system, including tape drive and monitor/tape buffer with 24 probes costs $25,000. Deliveries begin immediately from 2 Research Court, 20850.

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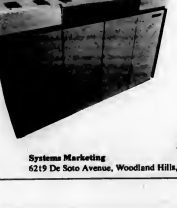

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computer industry

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June 30, 1971

CI Notes

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NEW YORK – "Ten billion dollars worth of purchased computers are installed and in operation in the U.S. At current market prices, these computers have a resale value of over $5 billion in the used computer market. Sales in 1970 were $50 million, only 1% of the potential volume," according to latest "All About Used Computers" study from Frost & Sullivan, Inc.

Thinking of Europe?

CLEVELAND, Ohio – Charles A. Wilkins, president of International Data Products Inc., 7777 Wall St., will be investigating import/export equipment and software markets in Europe for the next month. Inquiries will be relayed through his office.

Syntonic Services Delta

PHILADELPHIA – Syntonic Technology, Inc. will act as authorized service agency in the continental U.S. for Delta Data Systems EDP equipment. Specific products serviced by Syntonic will be Delta's Delta 1, TelTerm, BatchTerm, and Multi-Terms.

Supershorts

Western Data Sciences, Inc., Phoenix, Ariz., and Computeria, Inc., of Quincy, Mass., have entered into e joint marketing arrangement by which both firms will promote, sell, and support Cles II end Proforma packages on independent time-sharing services.

– – –

Boeing Computar Services, Inc. will market a family of computer programs by Management Data Systems of Madison, Wis., which provide tenant and management accounting and reporting for local housing authorities.

– – –

GSA is accepting proposals for a system that must be at least 16 times faster than a 360/91 on a large benchmark problem. The National Oceanic and Atmospheric Administration's geophysical fluid dynamics laboratory, Forrestal campus, Princeton University will use the system.

– – –

Bank holding companies would be permitted to process banking, financial or related economic data for any type of customer, according to an amendment, effective July 1, to the bank holding company act. The amendment is subject to approval by the Board of Governors of the Federal Reserve System.

– – –

Data Motivation Inc. has entered into a consulting agreement with NCR to assist NCR Industrial Products Division, Dayton, Ohio, in market planning and product studies relative to the OEM segment of the industry.

– – –

Software Firms Fight GSA Licensing Clause

By E. Drake Lundell Jr.
CW Computer Industry Editor

WASHINGTON, D.C. – Software houses are presently locking horns with the General Services Administration over a clause in the Federal Supply Schedule contract that would give the government free license to software packages after an equivalent of 120 months cumulative rental.

The clause calls for a "complete surrender" of proprietary rights held by the software houses, according to several industry sources.

The contested phrasing in GSA ADP Procurement Division Solicitation No. FTPC- 28159-N-1-5-71, Dec. 15, 1970, is the basis for the negotiation of Federal Supply Service contracts for the 1972 fiscal year, beginning July 1.

Several of the large software houses contacted by CW said they had negotiated FSS contracts, but that they had not accepted the clause.

'Somewhat Naive'

"It is somewhat naive" of the government to expect software companies to sign a contract with such a clause, according to Fred Ihrer, president of Comress. In addition, Ihrer charged that the inclusion of the phrase in the proposed contract indicated a "lack of understanding of the software business" on the part of government negotiators.

Applied Data Research also refused to go along with the clause and the government removed it before the firm signed the FSS pact for this year, according to Martin Goetz, a vice-president at ADR.

Herb Bright, president of another firm which refused to sign the contract with that clause, Computation Planning Inc., said a software company "can't negotiate the surrender of its proprietary rights."

Under the proposed contract, he pointed out, the government would get the program free if it was used by three agencies for 40 months or by 120 agencies for one month.

Other industry sources said the clause, as written, could force a "contingent liability" on some firms. Those that have had packages installed for over the 120 total might be forced to repay the government for the rental paid past the 120 month period, they said.

Officials at GSA refused to disclose how many of the contracts presently in force had included the clause, but industry sources said that around two of the present nine contracts included the wording.

Software industry sources said such terminology was contrary to the basic elements of free enterprise" and that such a move on the part of the government could "destroy the retail pricing concept for software products."

The action is presently being discussed by members of the Association of Independent Software Companies, but no agreement has been reached yet on a united plan of action.

DP Makers May Get Relief From Japan Trade Barriers

CW Washington Bureau

WASHINGTON, D.C. – Computer manufacturers could soon get relief from trade barriers imposed against U.S. goods by Japan, according to a joint communique released at the end of the eighth Japan-U.S. business-men's conference. The meeting was sponsored by the Japanese Federation of Economic Organizations (Keidanren) and the U.S. Chamber of Commerce.

"The Japanese delegation pointed out that Japan is moving quickly to remove its import restrictions and stated that it is committed to assuring that Japan also removes its non-tariff trade barriers," the statement indicated.

"Non-tariff trade barriers must be dealt with through multilateral negotiations under the aegis of such instruments as Gatt (General Agreement on Trade and Tariffs)."

The rate of unemployment in this country, aggravated by import competition, is resulting in "strong pressures to protect . . . industries" such as electronics, the U.S. delegation said.

In a related move, State Department officials told CW the U.S. "would like to see the quantitative [quota] restrictions on computers removed entirely," by the Japanese government. State Department officials also indicated that the removal of barriers against the import of computer equipment into Japan could possibly be taken up by the Gatt organization.

No major computer manufacturer was represented among the 60 U.S. delegates to the recent conference.

From the standpoint of the U.S. delegation, the key purpose of the conference was to impress upon the Japanese the American view that it is in Japan's national interest to:

- "Reduce and ultimately eliminate artificial barriers which Japan imposes against U.S. and other foreign goods and services, thus achieving more reciprocal trading arrangements between Japan and the U.S.
- "Liberalize more substantially and rapidly Japanese restrictions which inhibit U.S. investment in Japan so that reciprocity of U.S. and Japanese investment policies can be achieved.

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Reserve Board Encourages Member Banks To Move Toward Checkless Society

CW Washington Bureau

WASHINGTON, D.C. – A move toward making the cashless, checkless society a reality took a giant step forward with a recent policy statement issued by the Board of Governors of the Federal Reserve System. The statement entailed heavy emphasis on the use of computers.

The board called for basic changes in the nation's system of handling money payments, essentially transitional steps toward replacing the use of checks with electronic transfer of funds.

Plans call for establishment of new regional clearing centers throughout the country to expedite the clearing process and encouragement of banks and their customers to make greater use of the expanded capabilities of the Federal Reserve System's communications network.

Inducements to begin replacement of check transfers with transfers via wire would include:

- Removing charges and other restrictions upon the use of the Fed's wire network by member banks for transfers of $1,000 or more for their customers.
- Increasing the number of hours the network is open for business daily.
- Expanding facilities at reserve offices to equip them for high-speed tape transmission and computer communications.

This would permit linkups, chiefly of commercial bank computers through the use of Federal Reserve facilities, allowing virtually instantaneous payment. There would be no charge for the wire service between member commercial banks.

Directed to the presidents of 12 Federal Reserve Banks, the paper said modernization of the country's means of making financial transactions through the banking system "is becoming a matter of urgency."

The board's sense of urgency was based upon estimates that check volume will at least double in the present decade.

An average check passing through the clearing process is handled 10 times under present procedures. Despite the progress in mechanization and automation, according to the board, increases in productivity are limited by the fact that the processing of checks continues to require a substantial amount of hand labor.

WHAT'S AHEAD for the computer industry in the 1970's, as the recession draws to an end?

HOW WILL the mainframe builders fare? The independent peripheral makers? The crowded service and software industry?

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EDP industry report

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Contracts

PRC Information Sciences Co. of Los Angeles has been awarded a contract by the State of Florida to design and implement an automated and consolidated state retirement accounting system.

McDonnell Douglas Automation Co., St. Louis, has been selected by Sanitas Service Corp. to provide data processing for its nationwide financial management information system.

Logicon, Inc. and Mergenthaler Linotype Co., Los Angeles, have signed an agreement whereby Logicon will supply Mergenthaler with an MLCo 1130/505 interface.

Computer Technology, Inc. of Dallas has received a contract, valued at about $170,000, from the U.S. Social Security Administration for the design, implementation and maintenance of an acceptance test system.

The Department of Defense and McDonnell Douglas Corp. have awarded a contract in excess of $1.1 million to Hazeltine Corp., Greenlawn, N.Y., for additional multiple sensor display group systems.

Central Data Systems, Inc. of Cleveland has been selected to manage all DP operations for Hamburg Brothers, Inc., Pittsburgh.

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Morgan Upgrades Sales Forecast

CW Washington Bureau

WASHINGTON, D.C. — Morgan Information Systems planned to sell 200 units of its Morgan 200 "almost real-time" Autosearch microfilm retrieval system this year. However, Louis P. Rinehart, vice-president of marketing for the company, recently predicted the firm may sell five times its original goal.

The system features update, fast retrieval, computer interface and use with all types of film. Autosearch, the company said, meets the retrieval needs for the "after computer-output-microfilm (COM)" users for equipment which combines both computer and microfilm technologies.

The 200 uses roll microfiche which can store and retrieve up to 100,000 pages of computer printout on a roll of 105 mm film.

The Autosearch terminal enables the user to update his information by use of a second roll of 16 mm microfilm which carries revised and new data. When incorporated into the system's file, the information is coded with a location number identical to the page it replaces.

Marketing of the 200 is being handled initially through COM service bureaus. "They're doing business with the people we want to contact," explained Rinehart. "With limited capital we can't mount a major marketing program on our own."

Morgan will also "OEM" its product through a major company, Rinehart disclosed, and maintenance is being handled nationwide through Anderson Jacobson, the acoustic coupler firm. The 200 sells in the range of $5,000 to $8,000 and Morgan is currently negotiating with two companies to handle third-party leasing arrangements for the equipment.

Orders and Installations

A large department store chain in Germany, Kaufhof A.G., headquartered in Cologne, has ordered an Input 80 optical character recognition system from Recognition Equipment GmbH.

Portsmouth (Va.) General Hospital has installed an IBM System 3/6 in its pathology department.

An EMR 6135, valued at about $240,000, has been ordered by Executive Data Systems, Cedar Rapids, Iowa, for use in its hospital information network.

Bell Telephone Co. of Canada has ordered a Honeywell Model 6030, valued at $1.6 million, for use in the company's research, engineering, financial and DP departments on a time-sharing basis.

Maryland Casualty Co. of Baltimore will use its IBM 370/155 to expand Telfast, a policy writing service.

The First Federal Savings and Loan Association, Fort Lauderdale, Fla., has ordered an NCR Century 300.

NCR Century 50s have been installed at: Water Bonnet, Inc., Orlando, Fla.; The First Federal Savings and Loan Association, Savannah, Ga.; Pepsi-Cola Bottling Co. of Central Virginia, Charlottesville; and High Grade Beverage of New Brunswick in New Jersey.

Tempo Computers, Fullerton, Calif., has installed a Tempo I at the Jet Propulsion Laboratory of the California Institute of Technology for use in an evaluation system for simulation experiments on a deep space probe that will be sent to Mars.

Allegheny Power Service Corp. has ordered two General Electric GE-Pac 3010 process computers to be used for a supervisory control and data acquisition system in West Virginia by the Monongahela Power Co.

A second Univac 494, valued at about $2.1 million, has been acquired by the Yasuda Banking and Trust Co. of Tokyo, Japan.

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Nickels & Dimes

Barry Wright has reached agreement with State Street Bank of Boston for a $5 million revolving three-year loan, replacing a $4 million revolving loan in effect the past three years. The amount currently outstanding is $1.3 million.

$$$

American Data Systems is in the final stages of completing about $3 million in refinancing. ADS also expects to increase its bank's line of credit to $3 million, subject to certain provisions.

$$$

"Delays associated with production start-up of new products and systems" prohibited higher shipment levels, said Interdata President Daniel Sinnott. In the first quarter the minimaker dipped sharply in the red, with a loss of $218,500 on revenues of $1.4 million. The revenue was about the same for last year's period, when Interdata netted $40,400.

$$$

Diebold Computer Leasing has agreed to a request from holders of about 1.5 million shares (including shares issuable upon conversion of outstanding 6% convertible subordinated notes) to register the shares.

$$$

DCS Computer Services earnings doubled in the half year. Sales totaled $723,595 and earnings $30,215 or 6 cents a share. This compares with sales of $347,374 and earnings of $14,359 or 3 cents a share during the first half last year. In the second quarter, sales were $374,893 and earnings $16,065 or 3 cents a share compared with $203,872 and $4,096 or 1 cent e share for the three months last year.

$$$

Sanders Reveals Tight Money Situation

By e CW Staff Writer

NASHUA, N.H. – Sanders Associates, Inc. may not have "adequate working capital to meet future operational requirements" if a "timely and satisfactory" agreement is not reached on its contract with the Air Force for countermeasure equipment on the F-111 airplane.

Another major cause for difficulties is in the Data Systems Division, the firm's nine-month report shows.

The revelation of the tight working capital situation came as Sanders reported a loss of $622,000 or 14 cents a share for the nine months ended May 2. In the same period a year ago, the firm earned $455,000 or 10 cents a share.

The nine-month loss reflects a special charge of $2 million before taxes to provide a reserve for the division against possible write-downs on its products, according to Royden C. Sanders Jr., president.

The action was taken in the third quarter of the present fiscal year, Sanders said, pending a final evaluation of the impact on the company's commercial products lines of recent industry price changes and a general decline in computer industry sales.

The evaluation of the impact of price changes on the Data Systems Division products will be completed during the fourth quarter of the present fiscal year and "additional adjustment that may be required, if any, will be reflected in the results for the fiscal year ending July 31," the firm said.

Net earnings before provision for the special charge were $42,000 for the third quarter and $417,000 for the nine-month period, or one cent and nine cents a share respectively.

The Sanders contract with General Dynamics Corp. for the electronic countermeasures equipment is reportedly about $88 million, but its expenses on the program are reported to be "substantially" more.

Revenues as well as earnings fell in the nine month period, from $124.6 million a year ago to $116 million this year.

Collins Compiles 3d Quarter Loss

DALLAS – Collins Rsdio Co., which will soon be receiving a fiscal shot in the srm from North American Rockwell (NAR), has reported a third quarter net loss of $2.7 million, or 91 cents a share, on sales of $64.9 million.

This brings Collins' total losses for the nine months to $5.7 million, or $1.92 a share, on sales of $211.7 million.

The quarter's sales dropped dramatically from $80.6 million a year ago, when Collins made $168,000, or five cents s share. The company blamed the sales drop on reduced procurement and rescheduling of deliveries in government and avionics systems.

Collins for a long time has resisted acquisition by other firms, but recently signed an agreement with NAR to sell it $35 million of a new class of preferred stock. While the agreement has been signed by heads of the two companies, it is not yet final.

Computer Institutes Settle Antitrust Suit

NEW YORK – Electronic Computer Programming Institute and Herzing Institutes, Inc. have settled the litigation with which they were involved.

Herzing, headquartered in Milwaukee, Wis., owned and operated eight franchised ECPI computer schools in the Midwest and Canada. In June, 1970 ECPI demanded that Herzing refrain from taking certain actions which ECPI deemed to be in violation of its franchise agreements. Herzing countered with an antitrust suit and ECPI counterclaimed to collect moneys due and for breach of contract.

Under the settlement, Herzing is to pay ECPI $250,000.

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TRADE*QUOTES

Computerworld Stock Trading Summary

All statistics compiled, computed and formatted by TRADE*QUOTES, INC. Cambridge, Mass. 02138

CLOSING PRICES THURSDAY, JUNE 24, 1971

E X C	1971 RANGE (1)	CLOSE JUN 24 1971	WEEK NET CHNGE	WEEK PCT CHNGE
SOFTWARE & EDP SERVICES				
O	ADVANCED COMP TECH	1- ¼	1 5/8	- 1/8	-7.1
A	APPLIED DATA RES.	5- 13	7 3/8	- 5/8	-7.8
O	APPLIED LOGIC	3- ½	1 3/4	- 5/8	-35.3
O	ARIES	1- 2	1 1/4	0	0.0
N	AUTOMATIC DATA PROC	44- 03	41 1/2	-1 1/2	-2.1
O	AUTO SCIENCES	5- 8	5	- 3/8	-6.9
O	BOOTHE DATA SYS	1- 2	1 5/8	0	0.0
O	BRANDON APPLIED SYS	1- 1	5/8	0	0.0
O	COMPUTER ENVIRON	1- 2	1	0	0.0
O	COMPUTER NETWORK	5- 11	6 1/2	- 1/2	-10.0
O	COMPUTER PROPERTY	0- 11	0 1/2	0	0.0
N	COMPUTER SCIENCES	8- 17	15 1/2	-1	-0.8
O	COMPUTER TASK GROUP	1- 3	1 3/4	- 1/4	-12.5
O	COMPUTER USAGE	1- 10	8 1/2	- 5/8	-6.8
O	COMP AUTOMOT REPORTS	8- 13	10	0	0.0
O	COMPUTING & SOFTWARE	27- 55	33 7/8	-1	-2.8
O	COMBRESS	2- 4	2 7/8	- 3/8	-11.5
O	COMSHARE	6- 8	6 1/2	- 1/2	-7.2
O	CONSOL. ANAL. CENT.	1- 2	1 1/4	- 1/4	-18.8
O	DATA AUTOMATION	1- 4	1 5/8	- 1/8	-7.1
O	DATA PACKAGING	5- 10	8 1/2	- 5/8	-6.8
O	DATAMATION SERVICE	1- 3	1	0	0.0
L	DATATAB	4- 10	8 1/2	-1 1/4	-12.8
O	DIGITEK	1- 4	1 1/2	1/4	-14.2
O	EDP RESOURCES	7- 16	11 1/2	+ 1/2	+4.5
A	ELECT COMP PROG	7- 13	9	- 1/2	-5.0
N	ELECTRONIC DATA SYS.	58- 85	57 1/2	-4 1/8	-6.0
O	INFORMATICS	7- 15	10	-2	-16.6
A	ITEL	13- 25	15 3/8	- 5/8	-4.5
O	KEANE ASSOCIATES	8- 14	5 5/8	- 1/2	-8.1
O	KEYDATA CORP	8- 14	9 7/8	0	0.0
A	MANAGEMENT DATA	6- 11	7 7/8	- 1/2	-6.0
O	NATIONAL CSS INC	7- 14	8 1/4	-1 1/2	-15.9
O	NAT COMM ANALYSTS	3- 4	3 1/2	- 1/4	-6.6
O	NAT.COMP. SERV.	2- 4	2 1/2	- 3/8	-13.0
O	PLANNING RESEARCH	23- 48	27 1/2	- 3/8	-1.3
O	PROGRAMMING METHODS	18- 39	23	-1	-4.1
O	PROGRAMMING & SYS	2- 4	2 3/8	+ 1/8	+5.5
L	PROGRAMMING SCIENCES	1- 3	1/4	- 1/8	-33.3
O	SCIENTIFIC RESOURCES	1- 2	7/8	0	0.0
O	SOFTWARE SYSTEMS	1- 2	1 3/8	0	0.0
O	TOS COMPUTER CENTERS	5- 8	5	- 1/8	-2.4
O	TOLLEY INTL CORP	3- 8	7	- 1/2	-6.6
O	UNITED DATA CENTER	7- 13	8 1/2	- 3/4	-17.0
N	UNIVERSITY COMPUTING	21- 38	32 5/8	-3	-8.4
A	URS SYSTEMS	11- 21	12 5/8	- 1/8	-0.9
O	U.S. TIME SHARING	1- 3	1 3/8	- 1/4	-15.3
O	VORTEX CORP	2- 5	5	0	0.0

PERIPHERALS & SUBSYSTEMS

N	ANDRESSOGRAPH-MULT	24- 48	42 3/4	- 1/2	-1.1
O	ALPHANUMERIC	3- 6	3 1/4	+ 1/4	+8.1
N	AMBAC INDUS	17- 35	17 5/8	+ 1/8	+0.7
O	ASTRODATA	1- 2	1	0	0.0
A	ATLANTIC TECHNOLOGY	4- 9	4 5/8	- 1/8	-2.6
A	BOLT,BERANEK & NEW	0- 8	8 3/8	- 3/8	-4.5
N	BUNKER-RAMO	10- 17	11 3/4	- 3/4	-8.0
A	CALCOMP	15- 31	18 5/8	- 1/8	-0.5
O	COGNITRONICS	4- 8	4 5/8	- 1/4	-5.1
O	COLORADO INSTRUMENTS	6- 8	8 1/2	- 1/2	-12.5
O	COMPUTER COMMUN.	8- 18	10	+ 7/8	+9.5
A	COMPUTER EQUIPMENT	4- 7	5	- 1/8	-2.4
A	COMPUTEST	12- 20	15	-1 1/4	-8.6
O	CONSOL COMPUTER LTD.	8- 22	8 1/2	-3 5/8	-16.0
A	DATA PRODUCTS CORP	8- 10	8 5/8	0	0.0
O	DATA TECHNOLOGY	8- 16	8 3/4	- 5/8	-10.0
O	DIGITRONICS	4- 8	4 1/2	- 5/8	-12.1
N	ELECTRONIC M & M	8- 18	13 1/4	- 1/4	-1.8
O	FABRI-TEK	2- 4	2 7/8	- 1/4	-8.0
O	FARRINGTON MFG	1- 3	1/4	0	0.0
O	FOTO-MEM INC	5- 8	5/8	- 1/8	-10.0
O	INFOREX INC	51- 68	52 3/4	-2 1/2	-7.1
O	INFORMATION DISPLAYS	5- 8	5 5/8	- 3/8	-5.5
O	MANAGEMENT ASSIST	1- 2	7/8	0	0.0
A	MARSHALL INDUSTR B	17- 27	17	-1	-5.5
A	MILGO ELECTRONICS	18- 29	10 5/8	-1 1/2	-9.2
N	MOHAWK DATA SCI	23- 47	54	+5 1/4	+13.7
O	ON LINE SYSTEMS INC	7- 18	15	-1 1/2	-9.2
O	OPTICAL SCANNING	10- 18	10 1/8	- 7/8	-7.9
O	PHOTON	7- 12	8 7/8	-1	-10.1
O	PHOTO-MAGNETIC SYS.	1- 4	1	- 1/2	-20.0
A	POTTER INSTRUMENT	10- 25	18 3/8	- 5/8	-3.8
O	PRECISION INST.	7- 18	12	- 1/2	-4.0
O	RECOGNITION EQUIP	14- 28	17 1/2	-1 1/4	-6.8
O	REDCON CORP.	5- 8	5 1/2	-1	-15.3
N	SANDERS ASSOCIATES	15- 22	15 3/4	-1 3/4	-10.2
O	SCAN DATA	8- 14	15 3/8	+ 1/4	+1.8
O	TALLY CORP.	10- 16	10 5/8	- 7/8	-7.5
N	TELEX	10- 16	15	- 1/4	-1.6
O	VIATRON	1- 4	7/8	0	0.0

SUPPLIES & ACCESSORIES

N	ADAMS-MILLIS CORP	12- 19	15	+ 1/4	+1.9
O	BALTIMORE BUS FORMS	8- 10	8 3/4	- 1/4	-2.8
A	BARRY WRIGHT	8- 13	8 1/4	- 1/4	-2.9
A	DATA DOCUMENTS	18- 29	21	- 1/2	-2.3
O	DUPLEX PRODUCTS INC	8- 10	8 7/8	- 1/2	-5.3
N	ENNIS BUS. FORMS	9- 15	9	- 5/8	-6.5
O	GRAHAM MAGNETICS	6- 15	25 1/4	-2	-7.3
O	GRAPHIC CONTROLS	8- 15	12	-2	-14.2
N	HENDRIX	42- 78	43 1/2	-3 1/2	-7.4
N	IM COMPANY	88-118	115 5/8	-3 1/2	-2.7

E X C	1971 RANGE (1)	CLOSE JUN 24 1971	WEEK NET CHNGE	WEEK PCT CHNGE
O	MOORE BUS. FORMS	37- 42	38 1/4	+1	+2.4
N	NASHUA CORP	28- 47	46 1/8	-1	-2.1
O	REYNOLDS & REYNOLD	37- 53	53	+ 1/2	+0.8
O	STANDARD REGISTER	18- 23	18 3/4	0	0.0
O	TAB PRODUCTS CO.	8- 14	8	-1	-6.0
N	UARCO	25- 33	30	-1	-3.2
A	WABASH MAGNETICS	7- 10	9 5/8	- 1/4	-2.5
N	WALLACE BUS FORMS	16- 28	22 1/4	0	0.0
N	BURROUGHS CORP	105-138	125 5/8	-1 5/8	-1.2
N	COLLINS RADIO	14- 20	14 7/8	- 5/8	-4.0
O	CONTROL DATA CORP	48- 85	58 3/8	-1 1/8	-1.8
N	DATA GENERAL CORP	15-114	44	-1 1/2	-3.3
N	DIGITAL EQUIPMENT	53- 85	77 7/8	-2	-2.5
O	ELECTRONIC ASSOC.	5- 9	7 1/4	- 5/8	-8.2
A	ELECTRONIC ENGINEER.	5- 8	7 7/8	- 3/8	-4.5
N	FOXBORO	25- 45	42	-2	-4.5
O	GENERAL AUTOMATION	15- 28	12 1/2	- 1/4	-1.9
N	GENERAL ELECTRIC	58-124	58 1/2	-2	-3.3
N	HEWLETT-PACKARD CO	50- 93	48 7/8	-2 1/4	-5.2
N	HONEYWELL INC	85-115	104 1/2	-2 3/4	-2.5
N	IBM	310-384	313	+8	-2.4
O	INTERDATA INC	8- 11	8 5/8	- 5/8	-6.8
N	NCR	58- 91	46 5/8	0	0.0
N	RCA	28- 41	37 1/4	-2 7/8	-7.1
N	RAYTHEON CO	27- 48	38 5/8	- 5/8	-4.0
O	SCI. CONTROL CORP.	1- 2	7/8	0	0.0
N	SPERRY RAND	25- 38	33 1/4	-1 1/8	-3.2
A	SYSTEMS ENG. LABS	11- 18	10 5/8	- 7/8	-7.8
N	VARIAN ASSOCIATES	13- 18	13 3/4	0	0.0
N	VICTOR COMPTOMETER	15- 27	15 1/8	-1 5/8	-10.3
N	WANG LABS.	29- 50	42 3/4	-5	-8.5
N	XEROX CORP	50- 68	61 1/2	-2	-3.1
A	ROOTHE COMPUTER	13- 27	19	-2 1/4	-10.5
O	SPESNAHAN COMP.	2- 4	2 7/8	- 1/8	-4.1
O	COMPUTER EXCHANGE	5- 8	5 7/8	- 3/8	-7.1
A	CMMRUTER INVSTRS GRP	8- 14	10 1/8	-1 5/8	-11.9
N	DATA PROC. F & C	11- 18	15 3/4	- 5/8	-4.5
O	DATRONIC RENTAL	2- 4	2 3/8	- 1/8	-5.0
A	DEARBORN-STORM	24- 44	38 1/2	-1 1/4	-3.1
A	DIEBOLD COMP. LEAS.	5- 15	10	- 5/8	-5.8
A	DPAI, INC.	1- 2	1 5/8	- 1/4	-13.1
A	GRANITE HGT	8- 15	8 7/8	- 3/8	-4.1
A	GREYHOUND COMPUTER	7- 13	9	-1	-11.1
O	LEASCO CORP	18- 25	17 5/8	+ 3/8	+2.2
O	LECTRO HGT INC	2- 5	2 1/2	- 5/8	-13.0
A	LEVIN-TOWNSEND CMP	5- 8	8 1/4	- 1/4	-5.8
O	LMC DATA, INC.	1- 1	3/4	0	0.0
O	MCC INDUSTRIES	1- 1	7 5/8	0	0.0
O	SYSTEMS CAPITAL	3- 7	0 3/8	- 1/8	-1.9
O	U.S. LEASING	10- 28	27 7/8	- 1/8	-0.4

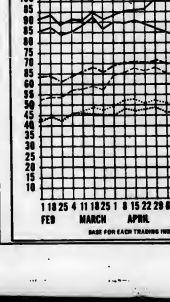
EXCH: N=NEW YORK EXCHANGE; A=AMERICAN EXCHANGE
L=NATIONAL EXCHANGE; O=OVER-THE-COUNTER
O-T-C PRICES ARE BID PRICES AS OF 3 P.M., OR LAST BID
(1) TO NEAREST DOLLAR

Computer Stocks Trading Index

Computer Systems ——— Software & EDP Services

Peripherals & Subsytems ..... Leasing Companies

Supplies & Accessories ---- CW Composite Index



BASE FOR EACH TRADING INDEX: 100 as of 3/1/69

Earnings Reports

SANDERS ASSOCIATES
Three Months Ended May 2

	1971	1970
Shr Erng	$0.01	5.04
Revenue	37,788,000	39,813,000
Spec Chg	01,039,000	.....
Earnings (Loss)	(987,000)	190,000
9 Mo Shr	4.09	.10
Revenue	115,672,000	124,822,000
Spec Chg	01,039,000	.....
Earnings (Loss)	(622,000)	455,000

e-Based on income before special charge. b-Reserve for possible write-downs pending final evaluation.

COMPUTER DIMENSIONS
Three Months Ended March 31

	1971	a1970
Revenue	$1,963,599	$1,161,978
Earnings	20,000	977

a-Restated to reflect reduction in federal and state income taxes resulting from carry-forward of prior years' operating loses.

URS SYSTEMS
Three Months Ended April 30

Shr Erng	1971 $.07	a1970 $.04
bRevenue	5,301,000	85,914,000
Spec Cred	.....	4,000
Earnings (Loss)	175,000	(123,000)
6 Mo Shr	.08	.12
bRevenue	9,222,000	11,802,000
Spec Cred	.....	4,000
cEarnings	262,000	332,000

a-Restated for acquisitions on a pooling of interests basis. b-From continuing operations. c-Equal to 10 cents a share in 1970.

FIMACO
Three Months Ended March 31

Shr Erng	a1971	b1970
(Loss)	$.02	$(.05)
Revenue	586,294	701,870
Spec Cred	.01	.....
Earnings (Loss)	13,910	(30,375)

a-Includes Fimaco Ltd, and American Computer Graphics. b-Restated to include Fimaco Ltd.

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60% of Package for Sale

'What Are We Bidding On'? Stops Software Auction

By Don Leavitt
CW Staff Writer

CAMBRIDGE, Mass. – Have you ever been to a software auction? An auction in which the merchandise is described as an "approximately 60% completed" real-time, on-line shareholder accounting package, together with "partially completed documentation"? It's a strange experience.

The program was begun by Commonwealth Computing, Inc. (CCI), and was being sold by Asset Management, which had a lien on the program to cover a CCI debt.

Calls by prospective bidders to Asset apparently went unanswered during the week before the sale so attendees had no clear idea of what was being sold.

Arriving when the auction was supposed to start, one attendee was told that the documentation was in the next room. But he then was asked, as an afterthought, "Are you the auctioneer"?

The documentation showed that the system was being developed in Cobol to run in a 65K partition under DOS/360, and to handle mutual fund shareholder accounting in either batch or on-line mode. Nothing was available to indicate whether any portions of the system were "up and running."

Before the bidding began, an Asset spokesman filled in some details. He was pretty sure that whatever coding had been done was in the office on punched cards. The update section of the system was complete, he said, but he wasn't sure if "complete" included programming.

The chief architect of the system couldn't answer any questions, since he was in Philadelphia.

And then arose the question of what the winning bidder would actually get. Asset Management was the "secured party" in the Commonwealth debt, and the program was the security.

While Asset and the auctioneer assured the bidders they would be assigned whatever rights Asset had in the program, they couldn't quite say that the winner would actually receive full title.

And so the auction got under way. As other bidders wondered whether they were being asked to "buy the sizzle instead of the steak," Asset itself entered a bid for $20,000.

Commenting that nothing about the system disclosed thus far warranted such a high bid, another member of the audience asked if the Asset bidder had additional information not available to the general public. The Asset bidder answered that $20,000 was the amount he was instructed to bid, and clammed up.

The auctioneer, fearing legal complications, promptly postponed the affair for a week. During that time, he said, Asset should make a real effort to define what was actually being sold.

Nader Asks DPers for Aid

(Continued from Page 1)

sumers really want" must be answered.

One non-DP member of the audience, Mildred Claypool, a community worker here took issue with Nader, Kuch and others.

She said Nader was talking about using volunteers to gather the input data, and Kuch about the amount of money it would cost for a consumer to be on-line to a system.

"You may send volunteers" into the ghetto, she told Nader, "but we ain't going to give you volunteers. Our people want money for their volunteer work. They need to eat.

"If I had $1, I'd rather spend it on food rather than spend it fooling around with a computer," she remarked to Kuch.

What is needed "is not a national consumer data bank but a study comparing urban and suburban markets. Consumer problems in the suburbs and in the ghettos are different," noted Donald P. Rothschild, a professor of law at the National Law Center, George Washington University.

Dr. Carl Hammer, director of computer sciences, Univac Federal Systems Division, put a damper on a consumer information system, indicating its costs would be astronomical.

Funding of such a system was also discussed. Malcolm D. Smith, staff advisor in marketing for Honeywell Information Systems, suggested that a non-profit corporation, similar to Comsat, might be the answer, since a great deal of money will be necessary to operate a project of this magnitude.

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COMPUTER TAPE TO-MICROFILM CONVERSION (BY JTC MICROCOM, A SUBSIDIARY OF JTC)

Maintenance Charges Rearranged by IBM

(Continued from Page 1)

On System 370 electronic equipment the 12-hour rate is unchanged, and the 24-hour rate inched down from 20% to 18%.

Also lowered were the 16- and 20-hour premiums.

Of interest to large teleprocessing system users, IBM is now offering centralized maintenance control at no extra cost. Maintenance at remote sites will be directed through one site, presumably located at or near the central computer of the network.

The new service will track the performance of the teleprocessing system and identify areas needing upkeep.

IBM has also altered the hourly machine rates for Business System Centers, Datacenters, and Sensor-based Systems Centers. At these centers IBM's Data Processing Division makes equipment available for use by customers' operators. The service is used to meet peak loads and other one-shot situations.

Rates on 14 machine models will be reduced effective July 1, and charges will be increased on 116 models Oct. 1.

Rates were increased an average of 11% on equipment that includes all 360 CPUs, and the 370/155s, 2314 disks and 2401 series tape drives. Two models of the 1403 printer were increased and two decreased.